

# Experiences of Interpersonal Emotion Regulation for People with Heightened Emotions: An Examination in People with Bipolar Disorder and Those with High Aggression

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## Abstract

Most research on interpersonal emotion regulation (IER) has focused on nonclinical samples. On one hand, people with clinically significant emotion, mood, or interpersonal difficulties may encounter more challenges with IER. On the other hand, IER could potentially be a useful resource for addressing challenges related to intrapersonal emotion dysregulation. We analyzed data from two samples characterized by heightened emotionality: people who self-reported a history of bipolar disorder ( $N = 51$ ) and people seeking treatment for aggression and emotional impulsivity ( $N = 199$ ). For comparison, we analyzed data from two samples recruited without regard to clinical status: undergraduates ( $N = 389$ ) and online respondents ( $N = 116$ ). We assessed multiple aspects of participants' experiences of intrinsic IER, including frequency of seeking and receiving IER, perceptions of provider responsiveness and provider hostility, perceptions of helpfulness, and reports of feeling ashamed due to receiving IER. We used two complementary methods: participants were first asked to report on their general experiences of seeking and receiving IER and were then asked to recall a recent instance of receiving IER. Results were largely consistent across the two methods and the two comparison samples, providing a replication in-kind. Relative to the comparison samples, the aggression sample reported more negative experiences of IER, on average, including more difficulty obtaining IER, receiving less responsive support, encountering more hostility, and perceiving IER as less helpful. In contrast, the bipolar disorder sample appeared to be less distinct from the comparison samples. We discuss the implications of this apparent divergence.

**Keywords.** interpersonal emotion regulation, emotion regulation, bipolar disorder, aggression.

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Heightened emotional responding and difficulties with emotion regulation are implicated in a broad range of mental health conditions (e.g., Aldao, Nolen-Hoeksema, & Schweizer, 2010; Compas et al., 2017; Houben, Van Den Noortgate, & Kuppens, 2015; Miskowiak et al., 2019), as well as a variety of clinically relevant behaviors, such as aggression and non-suicidal self-injury (e.g., Heffer & Willoughby, 2018; Robertson, Daffern, & Bucks, 2012; Wolff et al., 2019). Indeed, multiple volumes have focused on emotion, emotion regulation, and mental health (cf. Essau, LeBlanc, & Ollendick, 2017; Kring & Sloan, 2009; Rottenberg & Johnson, 2007; Gruber, 2019), and

many psychological treatments focus on emotion or emotion regulation processes (e.g., Farchione et al., 2012; Gratz & Tull, 2011; Linehan, 1993; Mennin & Fresco, 2014). Notwithstanding the central importance of emotion regulation in mental health, extant research has overwhelmingly focused on intrapersonal emotion regulation processes, or how people regulate their own emotions.

A rapidly growing body of work focused on the "slice of interpersonal interactions deliberately devoted to influencing one's own (intrinsic) or others' (extrinsic) emotions" is documenting the ubiquity and importance of interpersonal emotion regulation (IER)

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processes (e.g., Dixon-Gordon, Bernecker, & Christensen, 2015, p. 37; Netzer, Van Kleef, and Tamir, 2015; Niven, 2017; Zaki & Williams, 2013), which are the focus of the current work. We frequently reach out to others when we are experiencing strong emotions, often with the express goal of regulating our emotions (Rimé, 2009; Heiy & Cheavens, 2014; Liu, Strube, & Thompson, 2021; Tran et al., 2023). In turn, these interactions can powerfully shape how we respond and adapt to emotional experiences, as well as the quality of our social relationships (e.g., Heiy & Cheavens, 2014; Nils & Rimé, 2012; Pauw, Sauter, van Kleef, & Fischer, 2017; Pauw et al., 2023; Sahi, Ninova, & Silvers, 2021). To wit, multiple studies have now documented associations between individual differences in IER tendencies and emotional and relational well-being (e.g., Cheung, Gardner, & Anderson, 2014; Dixon-Gordon et al., 2018; Horn & Maerker, 2016; Rose, 2021; Spendelov, Simonds, & Avery, 2017; Williams et al., 2018). In the present study, we focused specifically on the receipt of IER, or intrinsic IER.

Although adeptness in intra- and inter-personal emotion regulation are modestly correlated, these two domains do appear to be statistically distinct (Swerdlow & Johnson, 2022; Dixon-Gordon et al., 2018). Thus, whereas difficulties with intrapersonal emotion regulation, including limited access to and ability to implement effective strategies, have been extensively documented across a broad range of mental health conditions (e.g., Cludius, Mennin, & Ehring, 2020; cf. Kring & Sloan, 2010), it remains unclear whether similar challenges are evident in IER. Indeed, one intriguing possibility is that, in at least some cases, IER might be an especially valuable resource for people who frequently struggle to regulate their own emotions. In a recent ecological momentary assessment study of clinically anxious youth, for example, co-distraction significantly outperformed solo distraction with respect to short-term down-regulation of negative affect, although this effect was only observed for boys (Stone et al., 2019). Despite the clear clinical relevance of understanding IER processes (see, e.g., Christensen & Haynos, 2020; Hofmann, 2014; López-Pérez, Ambrona, & Gummerum, 2017; Marroquín, 2011 for discussions of the conceptual and theoretical relevance of IER to a range of clinical conditions), the vast majority of IER research has focused on nonclinical samples. Here, then, our goal was to consider experiences of the use, receipt, and helpfulness of IER in two groups characterized by clinically relevant levels of heightened emotionality: participants who self-reported lifetime diagnoses of bipolar disorder and participants seeking treatment for

problems with aggression in the context of tendencies toward highly impulsive responses to emotions.

Bipolar disorder is a severe psychological disorder identified by the presence of at least one manic or hypomanic episode during the lifetime (APA, 2013). Manic and hypomanic episodes, in turn, are characterized by unusually high and sustained levels of elation or anger, accompanied by other symptoms, with hypomanic episodes being less severe than manic episodes. Relevant to the broad range of emotionality present in bipolar disorder, most people with bipolar disorder also experience episodes of depression and diagnosable levels of comorbid anxiety (APA, 2013; Nabavi, Mitchell, & Nutt, 2015). Perhaps of more import for daily emotional life, most people with bipolar disorder evidence heightened emotion reactivity even during remission from acute mood episodes (Johnson, Tharp, Peckham, & McMaster, 2016), more difficulty with cognitive tasks in the context of emotion (Kurtz et al., 2021), and less confidence in their emotion regulation abilities compared to controls (Gruber, Hagerty, Mennin, & Gross, 2022). Whereas people with bipolar disorder generally report limited success regulating their emotions, evidence has accrued from multiple laboratory studies that they often have the ability to effectively implement emotion regulation strategies when instructed (Gruber, Hagerty, Mennin, & Gross, 2022), which raises the possibility that IER could have the potential to be a useful resource for people with bipolar disorder if it can cue the use of contextually appropriate strategies. Overall, the combination of impairing mood episodes, heightened emotionality outside of those episodes, and challenges with intrapersonal emotion regulation all point to the importance of considering how IER might work for this population (see Villanueva, Swerdlow, & Gruber, 2023).

Alongside bipolar disorder, we also examined IER in a sample of participants who were seeking treatment for problems with aggression. Aggression is a particularly intriguing focus for IER for a couple of reasons. On the one hand, aggression is generally related to heightened tendencies to experience negative emotions (Sun et al., 2016) and to difficulties with intrapersonal emotion regulation (Robertson, Daffern, & Bucks, 2012; Röhl et al., 2012), which could present opportunities for IER. To wit, among specific negatively valenced emotions, anger appears to be an especially common target of IER in daily life (Swerdlow, 2022). On the other hand, anger and aggression may be particularly difficult for others to respond to as they involve threat (Moody et al., 2007), and potential providers may often be targets of receiver's ire. Indeed, people frequently engage in

extrinsic IER in situations in which they themselves are the cause or target of the receiver's emotions (Gonzalez, 2018; Swerdlow, 2022), which may be particularly tricky when the receiver is expressing anger or has a history of aggressive behavior. Here, it is important to note that our sample was defined by a specific, emotion-related form of aggression; beyond the requirement for participants to describe frequent instances of behavioral aggression, inclusion criteria for this sample also required that participants report elevated tendencies to respond impulsively during states of emotion more broadly. This sample, moreover, consisted specifically of people who had expressed interest in an intervention aimed at helping them to more effectively regulate their anger and reduce aggression. In other words, this sample was drawn from a population characterized by strong need or desire for emotion regulation—and also by consequential challenges with emotion regulation.

Overall, then, our aim was to consider two groups with different characteristic forms and types of emotionality, but which both involve frequent periods of intense, negative emotion and pronounced difficulties with intrapersonal emotion regulation. For convenience, we refer to these as high emotionality samples. As a comparison to these two high emotionality samples, we also assessed IER in two samples recruited without regard to clinical symptoms: a sample of undergraduate students and an online sample. The decision to include two high emotionality samples alongside two comparison samples in our analyses was guided by a desire to assess the specificity versus generalizability of study findings. In an effort to provide a comprehensive examination of experiences of IER in these high emotionality samples, we were interested in capturing multiple steps of the process, including whether individuals seek IER, whether they receive IER when they seek it, the qualities of the IER they receive, and the consequences of receiving IER. Next, we outline the specific goals that guided our investigation.

Our first goal was to examine whether the heightened emotionality groups would seek IER more or less often relative to the comparison groups. We are unaware of any prior research directly investigating this question in either bipolar disorder or aggressive samples; however, several studies have found that people with bipolar disorder report more frequent use of many different emotion regulation strategies, including both putatively adaptive and putatively maladaptive strategies, relative to controls, consistent with heightened need for regulation (see Villanueva, Swerdlow, & Gruber, 2023). Within the realm of IER research, moreover, self-reported tendencies to seek IER in hypothetical emotion scenarios—specifically in

the form of reassurance-seeking and venting—were found to be associated with symptoms of depression, anxiety, borderline personality disorder and with self-injury in one recent study (Dixon-Gordon et al., 2018). Such findings would seem to suggest that participants in the heightened emotionality samples might tend to seek IER more frequently than those in the comparison samples. Of course, seeking IER is not necessarily the same as finding IER; in some cases, a person's efforts to obtain IER might go unmet or even be rebuffed outright. As both bipolar disorder and recurrent aggression are tied to lower levels of social support and relationship quality (Boyers & Rowe, 2018; Cillessen et al., 2005; Panuzio & Dilillo, 2010), our second goal was to examine whether participants in our high emotionality samples would report more difficulties obtaining IER when they seek it.

Even when IER is received, its form and quality can vary considerably. For example, we recently showed that IER interactions vary in the degree to which receivers describe providers as having been empathically engaged and responsive, harsh and hostile, cognitively supportive, and physically present and available (Swerdlow & Johnson, 2022). Not surprisingly, these dimensions were robustly associated with receivers' perceptions of the helpfulness of those interactions, with responsiveness being most strongly, positively associated with perceived helpfulness and hostility being negatively associated (Swerdlow & Johnson, 2022). These dimensions of IER also differentially predicted day-to-day changes in well-being, stress, and loneliness (Swerdlow & Johnson, 2019). Certainly, there is reason to suspect that the quality of IER received might differ in the high emotionality samples relative to the comparison samples. For example, more than 90% of the close others of those with bipolar disorder endorse experiencing caregiver burden, which is often expressed in disengagement and detachment (Perlick et al., 2008). Similarly, aggression is a robust predictor of decline in the quality of close relationships and partnerships (Panuzio & Dilillo, 2010). In both cases, then, the combination of more frequently expressed (negative) emotions and diminished closeness might contribute to receipt of less empathically engaged or responsive IER (cf. Gonzalez, 2018). Beyond responsiveness, bipolar disorder and aggression are both tied to regarding others with more hostility, to high levels of anger and hostility from close others, to frequent experiences of stigma, and to high risk of being the target of aggression and violence (Cuenca Montesino, Gómez, & Martínez Arias 2015; Eisner & Johnson, 2008; Ellison, Mason, & Scior, 2013; Lahera et al., 2015; Latalova, Kamaradova, & Prasko, 2014; Lindsay & Anderson, 2000). Building on this literature,

our third goal was to examine whether the high emotionality samples would report lower levels of responsiveness and higher levels of hostility during IER interactions relative to the comparison group.

Perhaps of most direct clinical import, we were interested in participants' perceptions of the consequences of receiving IER. After all, IER interactions can be unhelpful or even counterproductive at times. For example, certain forms of IER, such as co-brooding—a form of rumination that involves passively dwelling on negative emotions and experiences with others—may intensify or prolong negative emotions and distress. To wit, individual or dyadic differences in co-brooding tendencies have been found to predict depressive symptoms and diagnoses in adolescents (e.g., Rose, Carlson, & Waller, 2007; Spindel, Simonds, & Avery, 2017; Stone, Hankin, Gibb, & Abela, 2011) and greater difficulty with adjustment to major life stress in adult romantic couples (Horn & Maercker, 2016). Whereas we have argued that IER may have the potential to be a valuable resource for people who struggle with intrapersonal emotion regulation, conceptually and empirically, there is also some reason to suspect that high emotionality groups may be particularly vulnerable to less positive outcomes of IER. Indeed, IER presents unique challenges compared to intrapersonal emotion regulation in that it depends on the receiver's ability to effectively communicate their emotions and emotion-related goals, on the provider's motivation and ability to understand those goals and respond appropriately, and on the receiver's ability to make use of the provider's responses effectively (cf. Dixon-Gordon et al., 2015). From a common-sense perspective, it may be more challenging for providers to consistently generate effective IER in the face of more frequent, intense, or threatening negative emotions (cf. Pauw et al., 2022) or for receivers to respond flexibly to feedback while experiencing such emotions (cf. Battaglini et al., 2022). Indeed, in one study, partners in romantic relationships who had been the target of intimate partner aggression endorsed doing more during interpersonal emotion regulation interactions to attempt to make their partner feel *worse* (Lee, 2020). Thus, our fourth goal was to consider whether persons with high emotionality would report that IER received was less helpful (e.g., for managing their feelings) than would those in the comparison sample.

Finally, we also considered one other potential consequence of receiving IER: feelings of shame. It is not uncommon for people to report that receiving IER made them feel ashamed of themselves, with evidence that at least moderate levels of shame are experienced after 20-33% of IER interactions (Swerdlow, Sandel,

& Johnson, 2023). Unsurprisingly, those with more intense emotions seem to be particularly vulnerable to the experience of shame after receipt of IER. Equally unsurprising is that receivers' interaction-specific ratings of provider responsiveness and hostility are likewise tied to shame ratings. Shame is only modestly associated with the perceived helpfulness of those interactions, though, suggesting it is a distinct outcome of IER in its own right (Swerdlow, Sandel, & Johnson, 2023). Accordingly, in considering the outcomes of IER in our high emotionality samples, we evaluated both perceived helpfulness and shame.

To recap, although most of the research on IER has considered nonclinical samples, IER may be particularly important to understand among those who struggle with persistently heightened emotionality. Tendencies toward emotional reactivity and difficulties with intrapersonal emotion regulation could create opportunities for IER. At the same time, there are many aspects of IER that are fraught with potential challenges, and those challenges could be particularly relevant for those with high emotionality. Our goal, then was to consider broadly the experience of IER in two groups defined by high emotionality relative to two comparison groups.

In testing hypotheses, it is important to note that two approaches to the assessment of IER have been well-validated. First, researchers have asked participants to rate their experiences of IER in general, without regard to specific interactions. Second, researchers have used a variety of strategies to gauge participants' perceptions of individual IER interactions, including ecological momentary assessment and autobiographical recall methods. Both approaches have advantages. The first allows for a broader perspective on people's overall beliefs about and perceptions of IER (e.g., perceptions of others as frequently tending to be hostile). The second allows for a more context-specific perspective. Given the relative strengths and weaknesses of the two approaches, we chose to use both assessment approaches, which allowed us to consider the generalizability of findings not only across samples, but also across methods—providing an internal replication in-kind. That is, we asked participants to rate their IER experiences in general and then to provide ratings of one specific, autobiographically recalled IER interaction. We hypothesized that relative to the comparison samples, both high emotionality samples (bipolar disorder and aggression) would report (1) seeking IER more often, (2) receiving IER less often, (3) receiving less empathy and more hostility during IER interactions, (4) perceiving IER interactions as less helpful, and (5) perceiving IER interactions as more shame-inducing.

## Method

### Participants

Participant characteristics for all four samples are detailed in Table 1. All participants were required to be 18 years of age or older, to be able to read and write fluently in English, and to consent to participate in research.

Data were collected from two samples characterized by concerns about heightened emotionality. Participants in Sample 1 were 51 adults who were recruited from a website devoted to bipolar caregiving ([bipolarcaregivers.org](http://bipolarcaregivers.org)) for a study of IER. Of the 154 people who responded to an advertisement for the study, agreed to volunteer, and completed a brief survey, 51 (33%) indicated that they had received a diagnosis of “mania, bipolar disorder, or manic-depression” in their lifetimes; this subset of participants comprised Sample 1. Participants in Sample 2 were 199 adults who enrolled in a trial of an online intervention for aggression occurring in the context of emotion-related impulsivity (Johnson et al., 2020). To be eligible to participate, participants in Sample 2 had to be 18 to 70 years of age and to endorse

problems with aggression and impulsivity. More specifically, potential participants had to score at least one standard deviation above normative means on the Physical aggression or Verbal aggression subscales of the Buss-Perry Aggression Questionnaire (Buss & Perry, 1992) and the Feelings Trigger Action subscale of the Three-Factor Impulsivity Index (Carver et al., 2011). Participants also had to be willing to sign a contract to take part in treatment. Exclusion criteria, also assessed online, included conditions that could interfere with behavioral change, including history of traumatic brain injury, brain tumor, or neurological disorders (e.g., Parkinson's disease, dementia); lack of proficiency in English; and current psychosis, alcohol use disorder or substance use disorder as indicated on the Psychiatric Diagnostic Screening Questionnaire (Zimmerman & Mattia, 2001). Potential participants who met these online screening criteria were then interviewed to assess the additional inclusion criterion of at least 6 incidents of aggression on the Modified Overt Aggression Scale Aggression scale (Coccaro et al., 1991) by phone. Measures of IER were included in the pre-treatment study battery.

**Table 1.** Sample Characteristics

	Undergraduate ( <i>N</i> = 389)		Bipolar ( <i>N</i> = 51)		Anger ( <i>N</i> = 199)		Online ( <i>N</i> = 116)	
	M/%	SD	M/%	SD	M/%	SD	M/%	SD
% Female	69.7		92.2		75.5		84.7	69.7
Ethnicity								
% White/Caucasian	22.0		66.0		57.7		47.7	
% Hispanic/Latinx	13.2		6.0		8.0		13.5	
% Black/African American	3.0		16.0		18.4		12.6	
% Middle Eastern	2.5		2.0		1.0		1.8	
% Asian/Asian American	49.2		6.0		10.9		15.3	
% Multiple Ethnicities	8.3		4.0		3.5		6.3	
% Other Ethnicity	0.8		0.0		0.5		2.7	
Age	20.63	3.32	26.96	11.29	38.90	23.52	24.60	10.65
Subjective SES	4.45	1.74	6.20	1.70	5.85	1.94	5.11	1.88
Lifetime Mental Health Treatment								
% Psychotherapy	25.7		74.5		55.7		36.4	
% Pharmacotherapy	13.9		80.4		46.5		21.1	
% Any Treatment	27.4		84.3		66.8		40.0	
General Experiences								
Frequency of Seeking	<b>3.02</b>	1.04	<b>3.08</b>	1.21	<b>2.67</b>	1.20	<b>2.99</b>	.96
Frequency of Receiving	<b>3.65</b>	1.14	<b>3.24</b>	1.29	<b>2.94</b>	1.24	<b>3.50</b>	1.18
Frequency of Responsiveness	<b>3.96</b>	.89	<b>3.84</b>	1.06	<b>3.30</b>	1.14	<b>3.65</b>	1.11
Frequency of Hostility	<b>1.88</b>	.97	<b>2.43</b>	1.21	<b>2.43</b>	1.27	<b>2.08</b>	1.12
Helpfulness	<b>14.49</b>	4.38	<b>13.98</b>	5.08	<b>13.21</b>	5.13	<b>15.00</b>	4.76
Autobiographical Recall								
IRIS Responsiveness	<b>7.09</b>	1.49	<b>7.37</b>	1.63	<b>5.97</b>	2.14	<b>7.36</b>	1.60
IRIS Hostility	<b>2.12</b>	1.55	<b>2.45</b>	2.03	<b>2.59</b>	1.92	<b>2.13</b>	1.87
Helpfulness	<b>28.64</b>	5.16	<b>27.67</b>	6.73	<b>25.39</b>	7.01	<b>28.97</b>	5.46
Shame	<b>1.86</b>	1.07	<b>2.33</b>	1.41	<b>2.08</b>	1.20	<b>2.08</b>	1.22

*Note.* IRIS = Interpersonal Regulation Interaction Scale.

We also recruited two comparison samples. Participants in Sample 3 were 389 college students enrolled at a large public university in the United States who participated in an online study of interpersonal emotion regulation in exchange for partial course credit. Participants in Sample 4 were 116 adults who volunteered to participate in an online study of interpersonal emotion regulation.

### Procedures and Measures

Across samples, participants completed identical procedures with respect to the current study. That is, after completing informed consent procedures, all participants completed two questionnaires about their experiences of receiving IER online using Qualtrics (Provo, UT): one to assess experiences of IER “in general,” followed by an autobiographical recall procedure that entailed recalling a recent instance of receiving IER and answering questions about the experience (see Swerdlow & Johnson, 2022 for more details). Participants also provided demographic information, including gender, ethnicity, age, subjective socioeconomic status using the MacArthur Ladder of Subjective Socioeconomic Status (Operario, Adler, & Williams, 2004), and whether they had received mental health treatment in their lifetime. Sample-specific procedures and measures that were not related to IER are not described here further. All procedures were approved by the Institutional Review Board before data collection.

#### General Experiences of IER Receipt

To emphasize the goal-oriented aspect of IER (Zaki & Williams, 2013), participants were instructed to think about times “when someone else did or said something to try to help you manage your emotions or feel better” and “when you wanted to feel more or less positive, more or less negative, or more or less calm, and someone else tried to help you.” These questions were framed with the stem “in general...”.

Participants completed two face-valid items about their overall frequency of “actively seeking out” IER and of “succeeding in finding someone who is willing to provide” IER when sought (1 = Almost never; 5 = Daily or almost every day). In an unpublished pilot sample ( $N = 300$ ), the seeking item was strongly correlated with the Negative Tendency subscale of the Interpersonal Regulation Questionnaire (Williams et al., 2018), which measures the tendency to seek out intrinsic interpersonal regulation of negative emotions,  $r = .53$  ( $p < .001$ ), and more modestly correlated with total scores on the Interpersonal Support Evaluation List (Cohen, Mermelstein, Kamarck, & Hoberman, 1985), which measures global perceptions of the availability of social support,  $r = .16$  ( $p = .005$ ). Conversely, the receiving item was more strongly

correlated with scores on the Interpersonal Support Evaluation List,  $r = .59$  ( $p < .001$ ) and moderately correlated with the Negative Tendency subscale of the Interpersonal Regulation Questionnaire,  $r = .30$  ( $p < .001$ ).

Participants completed four items about the frequency with which IER providers tend to be responsive, hostile, cognitively supportive, and physically present, using items that we had previously developed and validated to correspond to the four subscales of the Interpersonal Regulation Interaction Scale (see below; see also Swerdlow & Johnson, 2022). These frequency items were rated on a 5-point scale (1 = never or almost never; 5 = very often or almost always). As we did not have *a priori* hypotheses regarding between-group differences in the frequency of receiving cognitive support or physical presence, these items were reserved for supplementary analyses (see SOM).

Participants were asked six items about the helpfulness of receiving IER. First, participants were asked to indicate how *often* IER “helps you to change how you are feeling” (1 = never or almost never; 5 = almost always or always) and *how much* IER “helps you to change how you are feeling” (1 = much worse; 5 = much better). These two items were multiplied to index overall perceived helpfulness (inter-item  $r = .65$ ). In the same unpublished pilot sample ( $N = 300$ ), the product of these items was strongly correlated with the Negative Efficacy subscale of the Interpersonal Regulation Questionnaire (Williams et al., 2019), which measures perceptions of the effectiveness of intrinsic interpersonal regulation of negative emotions,  $r = .51$  ( $p < .001$ ).

Then, paralleling the approach taken to measuring frequency, participants also completed four items about how helpful it is when the other person is responsive, hostile, cognitively supportive, or physically present. As we did not have *a priori* hypotheses regarding between-group differences in the perceived helpfulness of each of these behaviors, these items were reserved for supplementary analyses (see SOM).

#### Autobiographical Recall Ratings & Interpersonal Regulation Interaction Scale

After recalling and briefly describing a recent instance of receiving IER using a prompt that paralleled the one used for the general ratings (see Swerdlow & Johnson, 2022 for additional procedural details), participants completed the 28-item Interpersonal Regulation Interaction Scale (IRIS; Swerdlow & Johnson, 2022). The IRIS is a self-report scale that captures receivers’ perceptions of the extent to which IER providers conveyed responsiveness (i.e., caring, understanding, and validation), physical presence (i.e., non-verbal

communication of availability and warmth), cognitive support (i.e., facilitating reappraisal, perspective-taking, and problem-solving), and hostility (i.e., criticism, dismissiveness, and invalidation) over the course of a particular IER interaction. Items were rated on a scale of 1 = they didn't do this at all to 9 = they did a lot of this.

In previous work using autobiographical recall procedures, these four dimensions were supported by exploratory and confirmatory factor analyses; were shown to be replicable and generalizable (i.e., demonstrated multigroup invariance across several samples); were correlated in the expected directions with, but nevertheless substantively distinct from measures of conceptually related individual differences (e.g., intrapersonal emotion dysregulation); and were robustly correlated with the perceived helpfulness of the recalled interactions even when adjusting for those individual differences (Swerdlow & Johnson, 2022). Internal consistencies were good-to-excellent for all four subscales in the current sample (all  $\omega$ s > .84).

Given our hypotheses, we focused on two of the four IRIS subscales in our primary analyses: responsiveness and hostility. For completeness, analyses of the cognitive support and physical presence subscales are summarized in supplementary analyses (see SOM).

To capture a range of perceived benefits of receiving IER, participants were asked five items regarding the extent to which the received interpersonal regulation interaction was helpful or unhelpful in changing: 1) how they felt overall; 2) how they felt about themselves; 3) how connected they felt to the other person; 4) their ability to cope with the situation; and 5) their sense of control over their emotions. Each was rated on a seven-point scale (e.g., 1 = definitely unhelpful/much worse; 7 = definitely helpful/much better). We have previously shown that ratings of these items are highly intercorrelated between interactions and robustly related to scores on the IRIS (Swerdlow & Johnson, 2022). Therefore, these items were summed to create an overall helpfulness composite, which showed excellent internal consistency ( $\omega = .91$ ).

Participants responded to a single face-valid item that captured the extent to which the interaction left them feeling ashamed of themselves (1 = not at all ashamed; 5 = very ashamed). We have shown previously that ratings of this item are substantially separable from the perceived helpfulness of receiving interpersonal regulation and are robustly associated with perceptions of providers as harsh and not responsive (Swerdlow, Sandel, & Johnson, 2023).

Participants also responded to items designed to probe other aspects of the interaction and the

circumstances leading up to the interaction (e.g., how much they wanted interpersonal regulation, how close they are with the person from whom they received interpersonal regulation, etc.). For completeness and context, exploratory analyses of these items are summarized in supplementary analyses (see SOM).

## Results

All analyses were conducted in R version 4.0.2 (R Core Team, 2020). Omega was calculated using the psych package (Revelle, 2021). Games-Howell's test was implemented via the rstatix package (Kassambara, 2023). Data for this study have been made available at <https://osf.io/c9amx>.

### Preliminary Analyses

Unsurprisingly, statistically significant differences were observed between the four samples on several demographic characteristics, including gender ( $p = .005$ ), ethnicity ( $p < .001$ ), age ( $p < .001$ ), subjective socioeconomic status ( $p < .001$ ), and the proportion of participants who reported having received mental health treatment (psychotherapy or pharmacotherapy) in their lifetimes ( $ps < .001$ ), as shown in Table 1. As one would expect, the high emotionality samples reported higher rates of lifetime mental health treatment receipt than either of the comparison samples. Across samples, these demographic variables were only modestly related to ratings of IER (all  $rs \leq |.21|$ ), as shown in Table 2.

We also computed zero-order correlations between the ratings of IER, which are reported in Table 3. Ratings of IER showed expected correlations, but appeared to be largely separable (e.g., only 2 of 36 correlations exceeded  $r = |.50|$ ).

### Primary Analyses

We examined between-group differences within an ANOVA framework, using Welch's test (Welch, 1951). The four samples (bipolar, aggression, undergraduate, online) were dummy-coded. We used Games-Howell's test, which is robust to unequal sample sizes and variances, to evaluate pair-wise comparisons between samples (Games & Howell, 1976).

#### General Experiences of IER

We observed statistically significant between-group differences with respect to ratings of seeking IER,  $F(3, 180.07) = 4.244$ ,  $p = .006$ ; receiving IER,  $F(3, 178.65) = 15.63$ ,  $p < .001$ ; perceptions of provider responsiveness,  $F(3, 172.78) = 15.459$ ,  $p < .001$ ; perceptions of provider hostility,  $F(3, 170.26) = 11.118$ ,  $p < .001$ ; and perceptions of overall helpfulness,  $F(3, 180.56) = 4.09$ ,  $p = .007$ .

**Table 3.** Zero-order correlations between demographic variables and ratings of interpersonal emotion regulation.

	Age	Gender	SES	Any Treatment
General Experiences				
Frequency of Seeking	-.08*	-.20***	-.06	.06
Frequency of Receiving	-.19***	-.12**	-.21***	-.05
Frequency of Responsiveness	-.15***	-.08*	-.08*	-.08*
Frequency of Hostility	.09*	.02	.14***	.10**
Helpfulness	.00	-.10**	-.08*	-.05
Autobiographical Recall				
IRIS Responsiveness	-.14***	-.15***	-.07*	-.07
IRIS Hostility	.01	.03	.06	-.02
Helpfulness	-.03	-.03	-.12**	-.06
Shame	-.01	.04	.10**	.07

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . IRIS = Interpersonal Regulation Interaction Scale. Correlations were calculated across samples.

**Table 2.** Zero-order correlations between interpersonal emotion regulation ratings.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
General Ratings									
(1) Frequency of Seeking	--	.50***	.16***	-.03	.29***	.17***	.00	.18***	-.09*
(2) Frequency of Receiving		--	.31***	-.19***	.31***	.32***	-.17***	.28***	-.18***
(3) Frequency of Responsiveness			--	-.17***	.27***	.41***	-.15***	.37***	-.14***
(4) Frequency of Hostility				--	-.11**	-.32***	.44***	-.21***	.29***
(5) Helpfulness					--	.32***	-.13***	.34***	-.21***
Autobiographical Recall Ratings									
(6) IRIS Responsiveness						--	-.36***	.51***	-.29***
(7) IRIS Hostility							--	-.26***	.43***
(8) Helpfulness								--	-.29***
(9) Shame									--

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . IRIS = Interpersonal Regulation Interaction Scale. Correlations were calculated across samples.

On average, participants in the aggression sample reported significantly lower rates of both seeking ( $p_{\text{undergraduate-aggression}} = .004$ ,  $p_{\text{online-aggression}} = .04$ ) and receiving ( $p_{\text{undergraduate-aggression}} < .001$ ,  $p_{\text{online-aggression}} < .001$ ) IER compared to participants in the comparison samples. They also reported tending to receive IER that was less responsive compared to any of the other three samples ( $p_{\text{undergraduate-aggression}} < .001$ ,  $p_{\text{online-aggression}} = .01$ ,  $p_{\text{bipolar-aggression}} = .001$ ) and more hostile compared to either of the two comparison samples ( $p_{\text{undergraduate-aggression}} < .001$ ,  $p_{\text{online-aggression}} = .01$ ). Finally, they reported that receiving IER was less helpful compared to either of the comparison samples ( $p_{\text{undergraduate-aggression}} = .02$ ,  $p_{\text{online-aggression}} = .01$ ).

Only one of the pairwise contrasts between the other three samples was statistically significant: participants in the bipolar disorder sample reported encountering more hostility than those in the undergraduate sample ( $p = .02$ ).

**Autobiographical Recall & IRIS Ratings**

With regard to participants' ratings of autobiographically recalled intrinsic IER interactions, significant between-group differences were observed for perceptions of provider responsiveness,  $F(3, 181.17) = 8.47$ ,  $p < .001$ ; perceptions of provider hostility,  $F(3, 181.55) = 3.54$ ,  $p = .02$ ; perceptions of overall helpfulness,  $F(3, 169.57) = 11.54$ ,  $p < .001$ ; and reports of shame,  $F(3, 176.13) = 3.24$ ,  $p = .02$ .

On average, participants in the aggression sample reported significantly lower levels of provider responsiveness compared to any of the other three samples ( $p_{\text{undergraduate-aggression}} < .001$ ,  $p_{\text{online-aggression}} = .01$ ,  $p_{\text{bipolar-aggression}} = .001$ ) and significantly higher levels of hostility compared to either of the two comparison samples ( $p_{\text{undergraduate-aggression}} = .02$ ,  $p_{\text{online-aggression}} = .03$ ). They also reported that the recalled interaction was less helpful overall compared to participants in the comparison samples ( $p_{\text{undergraduate-aggression}} < .001$ ,  $p_{\text{online-aggression}} < .001$ ).



Only two of the pairwise contrasts between the other three samples were significant: participants in both the bipolar disorder and online samples reported that the recalled interaction was less helpful overall compared to participants in the undergraduate sample ( $p_{\text{undergraduate-bipolar}} < .001$ ,  $p_{\text{undergraduate-online}} < .001$ ). None of the contrasts were statistically significant for ratings of shame.

## Discussion

The goal of the current study was to consider and describe experiences of IER in two groups with pronounced mood and emotion regulation challenges: those with a history of bipolar disorder and those with high levels of emotional impulsivity and aggression. We assessed experiences of IER using two complementary methods: reporting on experiences of receiving IER in general and reporting on a specific, recent instance of receiving IER.

Essentially across the board, participants in the aggression sample reported comparatively negative experiences of IER. Consistent with our hypotheses, participants in the aggression sample reported receiving IER less frequently, rated IER providers as less responsive and more hostile, and described IER interactions as less helpful overall, on average. Inconsistent with our hypotheses, participants in the aggression sample also reported *seeking* IER less frequently than participants. Importantly, these findings were all obtained across two methods and two comparison samples, providing an internal replication in-kind. One potential explanation for the comparatively low rate of seeking IER observed in the aggression sample is that people are, understandably, less inclined to seek IER if they regard IER as unlikely to be available or effective (cf. Tran et al., 2022). Overall, our findings strongly indicate that people who experience recurrent emotion-related impulsivity and aggression may have particular difficulties in successfully obtaining responsive and helpful IER, suggesting one more barrier to effective emotion regulation for this group.

The clear profile of IER difficulties observed in the aggression sample has several important implications for our understanding of IER. To date, most of the literature has focused overwhelmingly on nonclinical samples. To the extent that clinical symptoms have been considered in any fashion, the focus has tended to be on internalizing symptoms or syndromes. Concomitantly, much of the literature has focused either on the regulation of sadness or anxiety or has not drilled down on the specific emotions being regulated. Anger is an especially common target of people's IER efforts (Swerdlow, 2022), though, and different IER strategies may be perceived as differentially helpful

depending on the emotion being regulated (e.g., Shu, Bolger, & Ochsner, 2021). Recurrent experiences of intense anger and impulsive aggression may be particularly difficult to manage in an interpersonal context, potentially with consequences for many different aspects of people's interactions and relationships with others, including people's experiences of IER. Viewed another way, the findings point to several possible moderators or boundary conditions of the helpfulness of IER, including both individual differences (e.g., emotion-related impulsivity, trait hostility) and contextual variables (e.g., high-threat vs. low-threat conditions), that could be the focus of future work. The more hostile and less supportive IER profile reported by those with aggression is also of potential clinical importance. For example, previous work has shown that when wives engage in attempts to make their husbands feel worse during an IER interaction, the likelihood of retaliatory aggression increases (Lee, 2020). Taken together, future work will be needed to understand the mechanisms whereby recurrent aggression or its correlates undermine IER and whether effective strategies can be developed for promoting more helpful IER interactions for those with high levels of aggression and emotional impulsivity.

In contrast to the findings for the aggression sample, few of the contrasts between the bipolar disorder sample and the comparison samples were statistically significant, with the exceptions being that participants in the bipolar disorder sample tended to report encountering more hostility with respect to their general experience of IER and perceiving a recent IER interaction as less helpful—but only in comparison to the undergraduate sample. Thus, the findings for the bipolar disorder sample largely did not align with our hypotheses and were not consistent across methods or comparison samples. The predominantly null results obtained for this sample are potentially intriguing insofar as they suggest that people with a history of bipolar disorder are generally able to seek and obtain helpful IER at rates that are roughly comparable to those observed in comparison samples. Against a backdrop of studies consistently finding that people with bipolar disorder tend to report less success with intrapersonal emotion regulation (see Villanueva, Swerdlow, & Gruber, 2023), these findings suggest that IER might be a particularly valuable resource for people with bipolar disorder. Some caution is warranted in interpreting these results, though. First, the two statistically significant findings should not be disregarded out-of-hand. Second, null results are inherently challenging to interpret. The sample size for the bipolar group was relatively small, and so we were underpowered to detect small effects. Qualitatively

speaking, though, we note that the absolute magnitude of the mean differences between the bipolar disorder sample and the comparison samples were smaller than those between the aggression sample and the comparison samples, suggesting that the differences in statistical significance were not due solely to sample size. Third, participants were included in this sample on the basis of a self-reported lifetime diagnosis of bipolar disorder. We did not assess disorder severity or current mood status. It is important to note that many people with bipolar disorder achieve long periods of remission, and functioning varies significantly depending on mood status and across individuals with bipolar disorder. Thus, we were not able to assess whether, for example, those with more recent symptoms or episodes would report less positive experiences of IER.

We view the apparent divergence between the experiences of those in the aggression and bipolar disorder samples as striking and potentially illuminating. Indeed, an unexpected, but intriguing finding was that statistically significant differences between the two heightened emotionality samples were observed for ratings of provider responsiveness across both methods. Overall, we see these findings as bolstering the view that difficulties with aggression may be distinctive even when compared with other difficulties characterized by heightened emotionality.

Beyond those noted above, we acknowledge several other limitations here. First, we relied on cross-sectional self-report measures of IER and correlational analyses to describe participants' experiences of IER. Future work would do well to consider complementary methods, including other-report, behavioral observation, longitudinal research, and experimental research. Second, in our effort to understand multiple aspects of the pursuit, receipt, and helpfulness of IER, we calculated a total of 9 ANOVAs and 54 post-hoc contrasts—raising the possibility of type I errors across the full suite of analyses. This concern is somewhat reduced by the notable consistency of findings across the two measurement approaches and the two comparison samples. Third, our comparison samples were not specifically matched to either of our high emotionality samples, and we did not specifically assess bipolar disorder or aggression in the comparison samples. Although we would not expect high rates of either bipolar diagnoses or repetitive, severe aggression as both conditions are relatively rare (Coccaro & Lee, 2020; Merikangas et al., 2011), epidemiological data do indicate high rates of mental health concerns in undergraduate and online samples (Auerbach et al., 2018; Chandler & Shapiro, 2016), and many participants in the comparison samples did indicate that they were currently or had previously

received some form of mental health treatment—although rates of mental health treatment receipt were considerably lower in the comparison samples than in the heightened emotionality samples. To the extent that at least some of the participants in our comparison samples would have endorsed concerns related to heightened emotionality, the reported contrasts may be somewhat less easy to interpret, but are arguably more stringent as we would expect this to narrow the gap between the heightened emotionality and comparison samples. Beyond clinical characteristics, our samples differed on several demographic characteristics, and it is possible that third variables beyond those we measured and analyzed contributed to the between-group profiles of IER we observed. Of note, model outputs did not change substantively when demographic variables were entered as covariates, most findings replicated across the two comparison samples, and there was only one significant contrast between the two comparison samples despite the comparison samples themselves differing from each other on multiple demographic variables.

Limitations notwithstanding, we believe our work is novel in considering the pursuit, receipt, and helpfulness of IER in two samples of people who are prone to experiencing profound difficulties with emotion and emotion regulation. Our findings offer reason for both caution and optimism. On the one hand, participants in the aggression sample described perceiving higher barriers to obtaining effective interpersonal support, suggesting a need to attend more carefully to individual and contextual differences that may interfere with IER. On the other hand, when considered in absolute terms, the median ratings of helpfulness were still in the “somewhat helpful” range in the aggression sample and were even higher in the bipolar disorder sample, suggesting that IER does have the potential to be a valuable resource for these groups. In considering potential implications of this work, we note that many existing clinical interventions are premised at least partially on the notion that individuals who are experiencing intense emotional distress may benefit from certain types of interpersonal emotion regulatory interactions; this raises the question of whether similar dynamics would be evident in the context of clinical interactions. Ultimately, then, we see these findings as an important initial foray into an as-yet underexplored area within the IER space, which we hope will stimulate further empirical work, including replications, examinations of potential mechanisms, and consideration of strategies for facilitating more positive IER interactions for those who struggle with various forms of heightened emotionality or emotion dysregulation.

In conclusion, our results were partially consistent with our hypotheses in that one of the two heightened emotionality samples, the aggression sample, but not the bipolar disorder sample, reported more negative experiences of receiving IER. At the same time, we highlight that our focus on average between-group differences might obscure the extent of within-group heterogeneity. Indeed, it is intriguing to note that the standard deviations were generally higher—often statistically significantly higher—in the high emotionality samples compared to the comparison samples. Overall, these data illustrate both the promise and some of the potential challenges of IER for people who experience clinically significant difficulties with mood and emotion regulation.

## Supplementary Materials

Supplementary analyses can be found at <https://osf.io/n2jxk>

## Additional Information

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### Conflict of Interest

All authors declare that they have no conflicts of interest.

### Ethical approval

All study procedures were approved by the University of California, Berkeley Committee for the Protection of Human Subjects prior to data collection (Protocol Number 2015-12-8188, Approved 09/26/2016).

### Data Availability

Data are available at <https://osf.io/c9amx>

### Author CRediT Statement

**Benjamin Swerdlow:** Conceptualization, Methodology, Investigation, Formal Analysis, Writing – Original Draft. **Lesley Berk:** Conceptualization, Resources, Writing – Review & Editing. **Sheri Johnson:** Conceptualization, Resources, Writing – Review & Editing, Supervision, Funding Acquisition.

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## References

- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*(2), 217–237. <https://doi.org/10.1016/j.cpr.2009.11.004>
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (Fifth Edition). American Psychiatric Association. <https://doi.org/10.1176/appi.books.9780890425596>
- Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demeyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., Kessler, R. C., & WHO WMH-ICS Collaborators. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, *127*(7), 623–638. <https://doi.org/10.1037/abn0000362>
- Battaglini, A. M., Rnic, K., Jameson, T., Jopling, E., & LeMoult, J. (2023). Interpersonal emotion regulation flexibility: Effects on affect in daily life. *Emotion*, *23*(4), 1048–1060. <https://doi.org/10.1037/emo0001132>
- Boyers, G. B., & Simpson Rowe, L. (2018). Social support and relationship satisfaction in bipolar disorder. *Journal of Family Psychology*, *32*(4), 538–543. <https://doi.org/10.1037/fam0000400>
- Buss, A. H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, *63*(3), 452–459. <https://doi.org/10.1037/0022-3514.63.3.452>
- Carver, C. S., Johnson, S. L., Joormann, J., Kim, Y., & Nam, J. Y. (2011). Serotonin Transporter Polymorphism Interacts With Childhood Adversity to Predict Aspects of Impulsivity. *Psychological Science*, *22*(5), 589–595. <https://doi.org/10.1177/0956797611404085>
- Cillessen, A. H. N., Jiang, X. L., West, T. V., & Laszkowski, D. K. (2005). Predictors of dyadic friendship quality in adolescence. *International Journal of Behavioral Development*, *29*(2), 165–172. <https://doi.org/10.1080/01650250444000360>
- Chandler, J., & Shapiro, D. (2016). Conducting clinical research using crowdsourced convenience samples. *Annual Review of Clinical Psychology*, *12*, 53–81. <https://doi.org/10.1146/annurev-clinpsy-021815-093623>
- Cheung, E. O., Gardner, W. L., & Anderson, J. F. (2015). Emotionships: Examining people's emotion-regulation relationships and their

- consequences for well-being. *Social Psychological and Personality Science*, 6(4), 407-414. <https://doi.org/10.1177/1948550614564223>
- Christensen, K. A., & Haynos, A. F. (2020). A theoretical review of interpersonal emotion regulation in eating disorders: enhancing knowledge by bridging interpersonal and affective dysfunction. *Journal of Eating Disorders*, 8, 1-10. <https://doi.org/10.1186/s40337-020-00298-0>
- Cludius, B., Mennin, D., & Ehring, T. (2020). Emotion regulation as a transdiagnostic process. *Emotion*, 20(1), 37-42. <https://doi.org/10.1037/emo0000646>
- Coccaro, E. F., Harvey, P. D., Kupsaw-Lawrence, E., Herbert, J. L., & Bernstein, D. P. (1991). Development of neuropharmacologically based behavioral assessments of impulsive aggressive behavior. *The Journal of Neuropsychiatry and Clinical Neurosciences*, 3(2), S44-S51.
- Coccaro, E. F., & Lee, R. J. (2020). Disordered aggression and violence in the United States. *The Journal of Clinical Psychiatry*, 81(2). <https://doi.org/10.4088/JCP.19m12937>
- Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. M. (1985). Measuring the functional components of social support. In I. G. Sarason & B. R. Sarason (Eds.), *Social support: Theory, research and applications* (pp. 73-94). Springer Netherlands. [https://doi.org/10.1007/978-94-009-5115-0\\_5](https://doi.org/10.1007/978-94-009-5115-0_5)
- Compas, B. E., Jaser, S. S., Bettis, A. H., Watson, K. H., Gruhn, M. A., Dunbar, J. P., Williams, E., & Thigpen, J. C. (2017). Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychological Bulletin*, 143(9), 939-991. <https://doi.org/10.1037/bul0000110>
- Cuenca Montesino, M. L., Graña Gómez, J. L., & Martínez Arias, R. (2015). Reciprocal psychological aggression in couples: A multi-level analysis in a community sample. *Journal of Interpersonal Violence*, 30(14), 2488-2505. <https://doi.org/10.1177/0886260514553111>
- Dixon-Gordon, K. L., Bernecker, S. L., & Christensen, K. (2015). Recent innovations in the field of interpersonal emotion regulation. *Current Opinion in Psychology*, 3, 36-42. <https://doi.org/10.1016/j.copsyc.2015.02.001>
- Dixon-Gordon, K. L., Haliczzer, L. A., Conkey, L. C., & Whalen, D. J. (2018). Difficulties in interpersonal emotion regulation: Initial development and validation of a self-report measure. *Journal of Psychopathology and Behavioral Assessment*, 40(3), 528-549. <https://doi.org/10.1007/s10862-018-9647-9>
- Eisner, L. R., & Johnson, S. L. (2008). An acceptance-based psychoeducation intervention to reduce expressed emotion in relatives of bipolar patients. *Behavior Therapy*, 39(4), 375-385. <https://doi.org/10.1016/j.beth.2007.11.001>
- Ellison, N., Mason, O., & Scior, K. (2013). Bipolar disorder and stigma: A systematic review of the literature. *Journal of Affective Disorders*, 151(3), 805-820. <https://doi.org/10.1016/j.jad.2013.08.014>
- Essau, C. A., LeBlanc, S. S., & Ollendick, T. H. (Eds.). (2017). *Emotion regulation and psychopathology in children and adolescents*. Oxford University Press. <https://doi.org/10.1093/med:psych/9780198765844.001.0001>
- Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Thompson-Hollands, J., Carl, J. R., Gallagher, M. W., & Barlow, D. H. (2012). Unified Protocol for Transdiagnostic Treatment of Emotional Disorders: A randomized controlled trial. *Behavior Therapy*, 43(3), 666-678. <https://doi.org/10.1016/j.beth.2012.01.001>
- Games, P. A., & Howell, J. F. (1976). Pairwise multiple comparison procedures with unequal N's and/or variances: a Monte Carlo study. *Journal of Educational Statistics*, 1(2), 113-125. <https://doi.org/10.3102/10769986001002113>
- Gonzalez, F. (2018). *Interpersonal emotion regulation* [Doctoral dissertation, University of California, Berkeley]. ProQuest Dissertations Publishing.
- Gratz, K. L., & Tull, M. T. (2011). Extending research on the utility of an adjunctive emotion regulation group therapy for deliberate self-harm among women with borderline personality pathology. *Personality Disorders: Theory, Research, and Treatment*, 2(4), 316-326. <https://doi.org/10.1037/a0022144>
- Gruber, J. (Ed.) (2019). *The Oxford handbook of positive emotion and psychopathology*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190653200.001.0001>
- Gruber, J., Hagerty, S., Mennin, D., & Gross, J. J. (2023). Mind the gap? Emotion regulation ability and achievement in psychological health disorders. *Journal of Emotion and Psychopathology*, 1(1), 1-7. <https://doi.org/10.55913/joep.v1i1.22>
- Heffer, T., & Willoughby, T. (2018). The role of emotion dysregulation: A longitudinal investigation of the interpersonal theory of suicide. *Psychiatry Research*, 260, 379-383. <https://doi.org/10.1016/j.psychres.2017.11.075>
- Heij, J. E., & Cheavens, J. S. (2014). Back to basics: A naturalistic assessment of the experience and regulation of emotion. *Emotion*, 14(5), 878-891. <https://doi.org/10.1037/a0037231>

- Hofmann, S. G. (2014). Interpersonal emotion regulation model of mood and anxiety disorders. *Cognitive Therapy and Research*, 38, 483-492. <https://doi.org/10.1007/s10608-014-9620-1>
- Horn, A. B., & Maercker, A. (2016). Intra- and interpersonal emotion regulation and adjustment symptoms in couples: The role of co-brooding and co-reappraisal. *BMC Psychology*, 4(1), 51. <https://doi.org/10.1186/s40359-016-0159-7>
- Houben, M., Van Den Noortgate, W., & Kuppens, P. (2015). The relation between short-term emotion dynamics and psychological well-being: A meta-analysis. *Psychological Bulletin*, 141(4), 901-930. <https://doi.org/10.1037/a0038822>
- Johnson, S. L., Tharp, J. A., Peckham, A. D., & McMaster, K. J. (2016). Emotion in bipolar I disorder: Implications for functional and symptom outcomes. *Journal of Abnormal Psychology*, 125(1), 40-52. <https://doi.org/10.1037/abn0000116>
- Johnson, S. L., Zisser, M. R., Sandel, D. B., Swerdlow, B. A., Carver, C. S., Sanchez, A. H., & Fernandez, E. (2020). Development of a brief online intervention to address aggression in the context of emotion-related impulsivity: Evidence from a wait-list controlled trial. *Behaviour Research and Therapy*, 134, 103708. <https://doi.org/10.1016/j.brat.2020.103708>
- Kassambara, A. (2023). rstatix: Pipe-friendly framework for basic statistical tests. <https://CRAN.R-project.org/package=rstatix>
- Kring, A. M., & Sloan, D. M. (Eds.). (2010). *Emotion regulation and psychopathology: A Transdiagnostic approach to etiology and treatment*. The Guilford Press.
- Kurtz, M., Mohring, P., Förster, K., Bauer, M., & Kanske, P. (2021). Deficits in explicit emotion regulation in bipolar disorder: A systematic review. *International Journal of Bipolar Disorders*, 9(1), 15. <https://doi.org/10.1186/s40345-021-00221-9>
- Lahera, G., Herrera, S., Reinares, M., Benito, A., Rullas, M., González-Cases, J., & Vieta, E. (2015). Hostile attributions in bipolar disorder and schizophrenia contribute to poor social functioning. *Acta Psychiatrica Scandinavica*, 131(6), 472-482. <https://doi.org/10.1111/acps.12399>
- Latalova, K., Kamaradova, D., & Prasko, J. (2014). Violent victimization of adult patients with severe mental illness: A systematic review. *Neuropsychiatric Disease and Treatment*, 1925. <https://doi.org/10.2147/NDT.S68321>
- Lee, K. D. M. (2020). *The effects of interpersonal emotion regulation during conflict on partner-directed state aggression* [Doctoral dissertation, University of New Hampshire, Durham]. <https://scholars.unh.edu/dissertation/2509>
- Lindsay, J. J., & Anderson, C. A. (2000). From antecedent conditions to violent actions: A general affective aggression model. *Personality and Social Psychology Bulletin*, 26(5), 533-547. <https://doi.org/10.1177/0146167200267002>
- Linehan, M. M. (1993). *Skills training manual for treating borderline personality disorder*. Guilford Press.
- Liu, D. Y., Strube, M. J., & Thompson, R. J. (2021). Interpersonal emotion regulation: An experience sampling study. *Affective Science*, 2(3), 273-288. <https://doi.org/10.1007/s42761-021-00044-y>
- López-Pérez, B., Ambrona, T., & Gummerum, M. (2017). Interpersonal emotion regulation in Asperger's syndrome and borderline personality disorder. *British Journal of Clinical Psychology*, 56(1), 103-113. <https://doi.org/10.1111/bjc.12124>
- Marroquín, B. (2011). Interpersonal emotion regulation as a mechanism of social support in depression. *Clinical Psychology Review*, 31(8), 1276-1290. <https://doi.org/10.1016/j.cpr.2011.09.005>
- Mennin, D. S., & Fresco, D. M. (2014). Emotion regulation therapy. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 469-490). The Guilford Press.
- Merikangas, K. R., Jin, R., He, J.-P., Kessler, R. C., Lee, S., Sampson, N. A., Viana, M. C., Andrade, L. H., Hu, C., Karam, E. G., Ladea, M., Medina-Mora, M. E., Ono, Y., Posada-Villa, J., Sagar, R., Wells, J. E., & Zarkov, Z. (2011). Prevalence and correlates of bipolar spectrum disorder in the World Mental Health Survey Initiative. *Archives of General Psychiatry*, 68(3), 241. <https://doi.org/10.1001/archgenpsychiatry.2011.12>
- Miskowiak, K. W., Seeberg, I., Kjaerstad, H. L., Burdick, K. E., Martinez-Aran, A., Bonnin, C., Bowie, C. R., Carvalho, A. F., Gallagher, P., Hasler, G., Lafer, B., López-Jaramillo, C., Sumiyoshi, T., McIntyre, R. S., Schaffer, A., Porter, R. J., Purdon, S., Torres, I. J., Yatham, L. N., ... Vieta, E. (2019). Affective cognition in bipolar disorder: A systematic review by the ISBD targeting cognition task force. *Bipolar Disorders*, 21(8), 686-719. <https://doi.org/10.1111/bdi.12834>
- Moody, E. J., McIntosh, D. N., Mann, L. J., & Weisser, K. R. (2007). More than mere mimicry? The influence of emotion on rapid facial reactions to faces. *Emotion*, 7(2), 447-457. <https://doi.org/10.1037/1528-3542.7.2.447>
- Nabavi, B., Mitchell, A. J., & Nutt, D. (2015). A lifetime prevalence of comorbidity between bipolar affective disorder and anxiety disorders: A meta-analysis of 52 interview-based studies of psychiatric population. *EbioMedicine*, 2(10),

- 1405–1419.  
<https://doi.org/10.1016/j.ebiom.2015.09.006>
- Netzer, L., Van Kleef, G. A., & Tamir, M. (2015). Interpersonal instrumental emotion regulation. *Journal of Experimental Social Psychology*, *58*, 124–135.  
<https://doi.org/10.1016/j.jesp.2015.01.006>
- Nils, F., & Rimé, B. (2012). Beyond the myth of venting: Social sharing modes determine the benefits of emotional disclosure: Effects of sharing modes in emotional disclosure. *European Journal of Social Psychology*, *42*(6), 672–681.  
<https://doi.org/10.1002/ejsp.1880>
- Niven, K. (2017). The four key characteristics of interpersonal emotion regulation. *Current Opinion in Psychology*, *17*, 89–93.  
<https://doi.org/10.1016/j.copsyc.2017.06.015>
- Operario, D., Adler, N. E., & Williams, D. R. (2004). Subjective social status: Reliability and predictive utility for global health. *Psychology & Health*, *19*(2), 237–246.  
<https://doi.org/10.1080/08870440310001638098>
- Panuzio, J., & DiLillo, D. (2010). Physical, Psychological, and Sexual Intimate Partner Aggression Among Newlywed Couples: Longitudinal Prediction of Marital Satisfaction. *Journal of Family Violence*, *25*(7), 689–699.  
<https://doi.org/10.1007/s10896-010-9328-2>
- Pauw, L. S., Sauter, D. A., van Kleef, G. A., & Fischer, A. H. (2018). Sense or sensibility? Social sharers' evaluations of socio-affective vs. cognitive support in response to negative emotions. *Cognition and Emotion*, *32*(6), 1247–1264.  
<https://doi.org/10.1080/02699931.2017.1400949>
- Pauw, L. S., Sauter, D. A., van Kleef, G. A., Sels, L., & Fischer, A. H. (2022). *The dynamics of interpersonal emotion regulation: How sharers elicit desired (but not necessarily helpful) support*. PsyArXiv. <https://doi.org/10.31234/osf.io/v43zf>
- Pauw, L. S., Sun, R., Zoppolat, G., Righetti, F., & Milek, A. (2023). *May I help you? The relationship between interpersonal emotion regulation and emotional and relational wellbeing in daily life*. OSF. <https://osf.io/2mwfq/download>
- Perlick, D. A., Rosenheck, R. A., Miklowitz, D. J., Kaczynski, R., Link, B., Ketter, T., Wisniewski, S., Wolff, N., & Sachs, G. (2008). Caregiver burden and health in bipolar disorder: A cluster analytic approach. *Journal of Nervous & Mental Disease*, *196*(6), 484–491.  
<https://doi.org/10.1097/NMD.0b013e3181773927>
- Rimé, B. (2009). Emotion elicits the social sharing of emotion: Theory and empirical review. *Emotion Review*, *1*(1), 60–85.  
<https://doi.org/10.1177/1754073908097189>
- Robertson, T., Daffern, M., & Bucks, R. S. (2012). Emotion regulation and aggression. *Aggression and Violent Behavior*, *17*(1), 72–82.  
<https://doi.org/10.1016/j.avb.2011.09.006>
- Röll, J., Koglin, U., & Petermann, F. (2012). Emotion regulation and childhood aggression: Longitudinal associations. *Child Psychiatry & Human Development*, *43*(6), 909–923.  
<https://doi.org/10.1007/s10578-012-0303-4>
- Rose, A. J. (2021). The costs and benefits of co-rumination. *Child Development Perspectives*, *15*(3), 176–181. <https://doi.org/10.1111/cdep.12419>
- Rose, A. J., Carlson, W., & Waller, E. M. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: Considering the socioemotional trade-offs of co-rumination. *Developmental Psychology*, *43*(4), 1019–1031.  
<https://doi.org/10.1037/0012-1649.43.4.1019>
- Rottenberg, J., & Johnson, S. L. (Eds.). (2007). *Emotion and psychopathology: Bridging affective and clinical science*. American Psychological Association. <https://doi.org/10.1037/11562-000>
- Sahi, R. S., Ninova, E., & Silvers, J. A. (2021). With a little help from my friends: Selective social potentiation of emotion regulation. *Journal of Experimental Psychology: General*, *150*(6), 1237–1249. <https://doi.org/10.1037/xge0000853>
- Shu, J., Bolger, N., & Ochsner, K. N. (2021). Social emotion regulation strategies are differentially helpful for anxiety and sadness. *Emotion*, *21*(6), 1144. <https://doi.org/10.1037/emo0000921>
- Spendelov, J. S., Simonds, L. M., & Avery, R. E. (2017). The Relationship between Co-rumination and Internalizing Problems: A Systematic Review and Meta-analysis: Co-Rumination & Internalizing Problems. *Clinical Psychology & Psychotherapy*, *24*(2), 512–527. <https://doi.org/10.1002/cpp.2023>
- Stone, L. B., Hankin, B. L., Gibb, B. E., & Abela, J. R. Z. (2011). Co-rumination predicts the onset of depressive disorders during adolescence. *Journal of Abnormal Psychology*, *120*(3), 752–757.  
<https://doi.org/10.1037/a0023384>
- Stone, L. B., Mennies, R. J., Waller, J. M., Ladouceur, C. D., Forbes, E. E., Ryan, N. D., Dahl, R. E., & Silk, J. S. (2019). Help me feel better!: Ecological momentary assessment of anxious youths' emotion regulation with parents and peers. *Journal of Abnormal Child Psychology*, *47*(2), 313–324.  
<https://doi.org/10.1007/s10802-018-0454-2>
- Studart, P. M., Bezerra Filho, S., Studart, A. B. D., Almeida, A. G., & Miranda-Scippa, Â. (2015). Social support and bipolar disorder. *Archives of Clinical Psychiatry (São Paulo)*, *42*(4), 95–99.  
<https://doi.org/10.1590/0101-60830000000057>

- Sun, J. W., Xue, J. M., Bai, H. Y., Zhang, H. H., Lin, P. Z., & Cao, F. L. (2016). The association between negative life events, neuroticism and aggression in early adulthood. *Personality and Individual Differences*, *102*, 139–144. <https://doi.org/10.1016/j.paid.2016.06.066>
- Swerdlow, B. A. (2022). *Naturalistic assessment of interpersonal emotion regulation in romantic couples via ambulatory acoustic recording: Feasibility, reliability, and validity* [Doctoral dissertation, University of California, Berkeley. ProQuest Dissertations Publishing.
- Swerdlow, B. A., & Johnson, S. L. (2019). *How will you regulate my emotions?: A multistudy investigation of dimensions and outcomes of interpersonal emotion regulation interactions*. PsyArXiv. <https://doi.org/10.31234/osf.io/39eq4>
- Swerdlow, B. A., & Johnson, S. L. (2020). The Interpersonal Regulation Interaction Scale (IRIS): A multistudy investigation of receivers' retrospective evaluations of interpersonal emotion regulation interactions. *Emotion*. <https://doi.org/10.1037/emo0000927>
- Swerdlow, B. A., & Johnson, S. L. (2022). Associations between intra- and inter-personal emotion regulation [published conference abstract]. *Affective Science*, *3*, 273–289. <https://doi.org/10.1007/s42761-021-00071-9>
- Swerdlow, B. A., Sandel, D. B., & Johnson, S. L. (2022). Shame on me for needing you: A multistudy examination of links between receiving interpersonal emotion regulation and experiencing shame. *Emotion*. <https://doi.org/10.1037/emo0001109>
- Tran, A., Greenaway, K. H., Kostopoulos, J., & Kalokerinos, E. K. (2022). *What does interpersonal emotion regulation look like in everyday life?*. PsyArXiv. <https://doi.org/10.31234/osf.io/3gxcw>
- Tran, A., Greenaway, K. H., Kostopoulos, J., O'Brien, S. T., & Kalokerinos, E. K. (2023). *Mapping interpersonal emotion regulation in everyday life*. PsyArXiv. <https://doi.org/10.31234/osf.io/z52q7>
- Villanueva, C. M., Swerdlow, B. A., & Gruber, J. (2023). The challenge of emotion regulation in bipolar disorder. In J. J. Gross & B. Q. Ford (Eds.), *Handbook of emotion regulation* (3<sup>rd</sup> edition). Guilford Press.
- Welch, B. L. (1951). On the comparison of several mean values: An alternative approach. *Biometrika*, *38*(3/4), 330–336. <https://doi.org/10.2307/2332579>
- Williams, W. C., Morelli, S. A., Ong, D. C., & Zaki, J. (2018). Interpersonal emotion regulation: Implications for affiliation, perceived support, relationships, and well-being. *Journal of Personality and Social Psychology*, *115*(2), 224–254. <https://doi.org/10.1037/pspi0000132>
- Wolff, J. C., Thompson, E., Thomas, S. A., Nesi, J., Bettis, A. H., Ransford, B., Scopelliti, K., Frazier, E. A., & Liu, R. T. (2019). Emotion dysregulation and non-suicidal self-injury: A systematic review and meta-analysis. *European Psychiatry*, *59*, 25–36. <https://doi.org/10.1016/j.eurpsy.2019.03.004>
- Zaki, J., & Williams, W. C. (2013). Interpersonal emotion regulation. *Emotion*, *13*(5), 803–810. <https://doi.org/10.1037/a0033839>
- Zimmerman, M., & Mattia, J. I. (2001). A self-report scale to help make psychiatric diagnoses: The Psychiatric Diagnostic Screening Questionnaire. *Archives of General Psychiatry*, *58*(8), 787.