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A brief online intervention to address aggression in the context of emotion-related impulsivity for those treated for bipolar disorder: Feasibility, acceptability and pilot outcome data

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Abstract

Although aggression is related to manic symptoms among those with bipolar disorder, new work suggests that some continue to experience elevations of aggression after remission. This aggression post-remission appears related to a more general tendency to respond impulsively to states of emotion, labelled emotion-related impulsivity. We recently developed the first intervention designed to address aggression in the context of emotion-related impulsivity. Here, we describe feasibility, acceptability, and pilot data on outcomes for 21 persons who received treatment for bipolar disorder and endorsed high levels of aggression and emotion-related impulsivity. As with other interventions for aggression or bipolar disorder, attrition levels were high. Those who completed the intervention showed large changes in aggression using the interview-based Modified Overt Aggression Scale that were sustained through three months and not observed during wait list control. Although they also showed declines in the self-rated Buss-Perry Aggression Questionnaire and in self-rated emotion-related impulsivity as assessed with the Feelings Trigger Action Scale, these self-ratings also declined during the waitlist control. t Despite the limitations, the findings provide the first evidence that a brief, easily disseminated intervention could have promise for reducing aggression among those with bipolar disorder.

Keywords

Aggression is behavior intended to harm living beings against their will (Baron & Richardson, 1994) or that is intentionally destructive to property (Bandura, 1973). Although people with mental illness are more likely to be victims than perpetrators of violence, many with bipolar disorder (BD) exhibit high rates of aggression (Perroud, Baud, Mouthon,

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Courtet, & Malafosse, 2011). In the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) representative study, 25.34% of those with bipolar I disorder and 13.58% of those with bipolar II disorder reported aggressive behavior after age 15, compared to .66% in the general population (Látalová, 2009). In the National Comorbidity Survey (NCS), 17% of those with BD endorsed engaging in violence in the past year, a rate 8-fold that observed in the general population (Corrigan & Watson, 2005). In the NCS Replication study, people with BD reported violent crime convictions at four-fold the rate observed in the general population (Casiano, Belik, Cox, Waldman, & Sareen, 2008).

When people with BD exhibit aggression, it typically occurs during mood episodes, and particularly during hypomanic or manic episodes (Cassidy, Forest, Murry, & Carroll, 1998). Anger is a cardinal symptom of manic and hypomanic episodes (American Psychiatric Association, 2013) and is common during episodes among adults (Cassidy, Forest, Murry, & Carroll, 1998) and children (Wozniak, Biederman, Kwon, Mick, Faraone, Orlovsky, & Van Grondelle, 2005). Accordingly, treatment for aggression in BD most typically focuses on relieving the mood episodes, using mood stabilizers (Sachs, Printz, Kahn, Carpenter, & Docherty, 2009).

Although aggression is more likely during manic episodes, longitudinal studies that followed those with BD to remission document high rates of aggression compared to healthy controls ((Ballester, Goldstein, Goldstein, Obreja, Axelson, Monk, & Birmahe, 2012; Garno, Gunawardane, & Goldberg, 2008; Johnson & Carver, 2016). This suggests the need to target aggression above and beyond addressing mood episodes.

Outside of BD, anger and aggression have been transdiagnostic targets of many intervention studies. In a meta-analysis of nearly 100 studies of psychotherapy (summing across cognitive, cognitive behavioral, relaxation, skills training, stress inoculation, and multicomponent therapy) for diverse anger and aggression outcomes, anger was moderately treatable (d=.76) with effects that are substantively larger than psychoeducation alone (d =.37); however, aggression is more difficult to treat, and outcomes vary greatly (d= .18 to .61; (Saini, 2009)). Medications commonly used to treat aggression, including antidepressant, antiepileptic, and antipsychotic medications, appear to help some people reduce their aggression, however, these effects are fairly small, and effect sizes vary by study ((Coccaro, Emil, Lee, & Kavoussi, 2009; Stanford, Anderson, Lake, & Baldridge, 2009; van Schalkwyk, Beyer, Johnson, Deal, & Bloch, 2018)). Indeed, in a meta-analysis of studies at low risk of bias, no class of mood-stabilizing medications appeared efficacious compared to placebo at reducing aggression (Jones, Arlidge, Gillham, Reagu, Van Den Bree, & Taylor, 2011). Further, these medications produce significant side effects.

The limited efficacy suggests the need to consider new treatment targets. Here, we focus on emotion-related impulsivity, defined as the tendency to respond rashly to emotion states (Whiteside & Lynam, 2001). Logically, emotion-related impulsivity might serve as a risk factor for problems controlling aggression in the face of anger, or reactive aggression (as contrasted with aggression used to gain interpersonal control in the absence of anger). Emotion-related impulsivity is more elevated in remitted bipolar disorder than are other forms of impulsivity ((Johnson, Carver, & Joormann, 2013; Muhtadie, Johnson, Carver,

Gotlib., & Ketter, 2014)). Emotion-related impulsivity is also more robustly related to aggression than are other forms of impulsivity, such as lack of perseverance and sensation seeking (Berg, Latzman, Bliwise, & Lilienfeld, 2015). Emotion-related impulsivity has been correlated with aggressive behaviors, sexual assault, and intimate partner violence (Derefinko, DeWall, Metze, Walsh, & Lynam, 2011; Miller, Zeichner, & Wilson, 2012; Settles, Fischer, Cyders, Combs, Gunn, & Smith, 2012). Effects have been shown using observer and laboratory measures of aggression (Bousardt, Hoogendoorn, Noorthoorn, Hummelen, & Nijman, 2016; Scott, DiLillo, Maldonado, & Watkins, 2015). Among persons with remitted bipolar I disorder, emotion-related impulsivity was more strongly related to aggression than were nonemotion-related forms of impulsivity, and effects remained significant when controlling for clinical variables (Johnson and Carver, 2016).

Recently, a brief emotion regulation intervention program offered as a prevention approach in a general classroom setting led to reduced emotion-related impulsivity (Zapolski & Smith, 2017). We extend this work to examine whether a brief behavioral program might be helpful for those with clinically significant concerns related to emotion-related impulsivity.

Accordingly, we recently developed the first intervention to target aggression among those with high emotion-related impulsivity (Johnson, Zisser, Sandel, Carver, Swerlow, Fernandez, Sanchez, & Galloway, 2019). This brief (6 sessions) behavioral intervention was designed to help clients identify anger and triggers of aggression, implement self-calming strategies, and pre-plan coping. The intervention was delivered online, a method that has worked for previous anger treatment (Howie & Malouff, 2014). Probes sent by cellphone app 4 times daily for 2 weeks supported the application of skills from the intervention in daily life. Although we advertised for people who were impulsive and aggressive, 21 participants who reported lifetime treatment or medication for bipolar disorder enrolled in our study. Here, we examine the feasibility and acceptance of the intervention for this subgroup and provide preliminary evidence about change in aggression and emotion-related impulsivity during the intervention as compared to waitlist control.

Method

Treatment description

Details of treatment development are provided elsewhere (Johnson et al., 2019). Emotion-related impulsivity has been tied to cognitive control deficits in multiple clinical samples (Johnson, Tharp, Peckham, Sanchez, & Carver, 2016). Accordingly, cognitive strategies like reappraisal that are often included in cognitive therapy may be challenging for people high in emotion-related impulsivity. Rather than rely on cognitively-demanding interventions, our intervention relied on well-validated behavioral strategies, supplemented with implementation intentions.

Participants completed six sessions:

- treatment overview and psychoeducation;

- triggers of aggression and early identification of anger;

- relaxation training;

- personalized feedback about aggression risk based on self-monitoring logs;

- implementation intentions;

- intervention review.

Sessions involved didactic content, interactive prompts, and personalized feedback. Each session required 45 min or less to complete.

Overview and psychoeducation

Participants received psychoeducation on differentiating anger (a common emotion) from aggression (a problematic behavior), common triggers for aggression (e.g., anger, shame, feeling disrespected), and warning signs of anger (e.g., physiological arousal, judgments of the other). They also received feedback that, based on their responses to baseline questionnaires, they experience more anger and aggression than others do and have trouble with impulsive speech and behavior when feeling strong emotions. To facilitate motivation, they were asked to review consequences of their aggression, including legal and relationship problems.

Anger risk factors, triggers and identification

Participants completed questions and received personalized written feedback about risk factors for their aggression, such as depression, neuroticism, trauma, cognitive beliefs, feeling disrespected, rumination, and shame. In addition to identifying triggers, participants were taught to notice physiological, cognitive and behavioral signs of anger.

Self-calming

Based on the idea that emotion-related impulsivity makes it hard to control responses when highly aroused, participants were taught to leave the scene long enough to calm down. We encouraged relaxation training as a way to reduce overall arousal, and with more practice over time as a way to more rapidly reduce arousal in high stress contexts.

We encouraged using self-calming before expressing anger to avoid regrettable aggressive responses. Relaxation training has been shown to be effective for reducing aggressive behavior, with moderate to large effect sizes in meta-analyses ($d = 0.67$–0.90; (Lee & DiGiuseppe, 2018)). Still, about a third of participants in relaxation studies did not have successful treatment outcomes (Saini, 2009), suggesting a need to pair relaxation training with other strategies. Of the many available relaxation strategies, we taught diaphragmatic breathing, which is easily learned (Ferguson, 2006). Participants were taught ways to address barriers to using relaxation, such as focusing on their breath to reduce repetitive thinking about their anger. They also were instructed to practice relaxation techniques while imagining progressively more difficult contexts (imaginal exposure).

Self-monitoring

Logs were gathered to help participants self-monitor their anger, aggression, related triggers and use of coping skills. Participants were asked to complete logs four times per day for one week after session 2 and for one week after session 3, using LifeData software (LifeData,

LLC, Marion, Indiana). In 3 of the logs, participants were asked whether they had experienced anger since the previous prompt. Those who endorsed anger were asked details about their anger (e.g., intensity, physiological sensations, expressions, duration), triggers (e.g., "feeling attacked," interpersonal interactions), and coping (e.g., use of emotion regulation strategies, including relaxation techniques, and effectiveness of coping in reducing anger). In a fourth log, participants were asked to reflect on their most intense anger episode from the day and to form implementation intentions for coping with future anger. After completing two weeks of logs, participants were given personalized written feedback about their patterns of anger experience and expression, typical anger triggers, and which coping strategies were the most effective for them.

Implementation intentions

Participants were taught to develop personalized implementation intentions. Implementation intentions involve creating specific "if-then" plans; "if" the participant encountered a high-risk situation, "then" they would employ an emotion regulation skill they had learned. Multiple previous studies indicate that implementation intention interventions successfully reduce impulsive behavior and inappropriate expression of emotion (Webb, Schweiger Gallo, Miles, Gollwitzer, & Sheeran, 2012; Webb, Sheeran, Totterdell, Miles, Mansell, & Baker, 2012). Specifically, participants identified a wish (desired change to make in their anger expression; e.g., stop yelling at my mother), and outcome (ideal result of that change, e.g., a peaceful relationship), an obstacle (difficulties in making the desired change, e.g., responding immediately when angry or a sudden heated argument), and a specific plan (e.g., using relaxation rather than discussing conflict when angry). Participants set a goal that could be attained within a month and were asked to practice and track their results daily on the WOOP (Wish, Outcome, Obstacle, Plan) app (http://woopmylife.org/app; (Saddawi-Konefka, Baker, Guarino, Burns, Oettingen, Gollwitzer, & Charnin, 2017)).

Wrap up

In the sixth module, participants reviewed summaries of the previous modules, reported on progress toward their goals, and refined future coping plans.

Treatment implementation

The intervention was programmed for online administration using Qualtrics (Provo, Utah). Participants could complete modules as convenient but were encouraged to practice skills learned before the next module and to complete at least one module per week. To minimize attrition, participants were sent an email reminder if they did not log in to the intervention for one week and again if another week passed. Although we encouraged non-completers to complete post-treatment assessment for intent-to-treat analyses, none did so.

Sample

Participants were recruited via online, print, and radio advertising, and through advertisements sent to community clinics and support groups that provided care for anger and aggression. Recruitment materials targeted anger and aggression, not bipolar disorder. Our focus in this paper is on those who self-identified as having received psychological or

medication treatment for bipolar disorder. Participants completed online questionnaires and a phone interview to assess inclusion criteria.

Measures

Timing of measures administered is shown in Table 1. Participant flow is shown in Fig. 1. Upon completion of screening measures, demographic and medical history items, participants were assigned to either immediate intervention or waitlist. Those assigned to the waitlist completed pre-waitlist measures and then waited for about 6 weeks. After that, their sequence mirrored that in the immediate treatment condition. That is, all participants completed assessments pre-treatment, two weeks post-treatment, and 3 months post-treatment. Incentives were provided for each assessment: $15 for pre-treatment, $20 for post-treatment, $30 for three-month follow-up, and $15 for those who completed pre-waitlist assessments.

Other measures, not described here, were given to assess the generalizability of the intervention (see (Johnson et al., 2019)). All measures used have been well-validated. Reliability estimates for all measures were generally adequate (see (Johnson et al., 2019)).

Modified Overt Aggression Scale Aggression scale (MOAS)

The MOAS is a semi-structured interview to assess Verbal aggression (ranging from loudness and shouting to threats of violence), Aggression against property (ranging from slamming doors to setting fires), Autoaggression (self-harm and suicide attempts ranging from skin picking to serious bodily harm), and Physical aggression (ranging from threatening gestures such as swinging at someone to attacks that cause serious physical harm) (Coccaro, Harvey, Kupsaw-Lawrence, Herbert, & Bernstein, 1991). Probes are included for each subscale, and behaviors are rated using examples on a scale of 1 (least severe) to 4 (most severe). To form a total score, Verbal, Property, Autoaggression, and Physical subscale scores are multiplied by 1, 2, 3, and 4, respectively, and then summed (range 1 to 40). We also assessed the three-month rate of aggression for study inclusion. Trained interviewers who were unaware of treatment assignment completed interviews by phone.

Buss-Perry Aggression Questionnaire (BPAQ)

The original BPAQ is the most widely used aggression scale (Buss & Perry, 1992). To ensure adequate coverage, we included all nine Physical aggression items from the BPAQ (e.g., "Given enough provocation, I may hit another person", "I have threatened people I know."). The factor-analytically derived BPAQ-SF is a brief and reliable form of the original scale (Bryant & Smith, 2001). We used the BPAQ-SF to assess Anger and Verbal aggression (3 items each). (We did not analyze the Hostility subscale, which does not cover our intervention target of regrettable behavior.) Items are rated from 1 (Extremely uncharacteristic) to 5 (Extremely characteristic), and subscales are scored by summing items. Participants completed items with reference to the past month.

Feelings Trigger Action Impulsivity Scale

The 26-item Feelings Trigger Action scale covers trait-like tendencies to engage in impulsive behaviors in response to emotion (Carver, Johnson, Joormann, Kim, & Nam, 2011). Items cover impulsive responses to positive (Cyders, Smith, Spillane, Fischer, Annus, & Peterson, 2007) and negative emotions (Whiteside & Lynam, 2001), as well as reflexive reactions to feelings, and are rated on a 5-point scale. The total score, calculated as the mean of items is significantly correlated with aggression (Johnson et al., 2013b).

Intervention measures

Intervention use was automatically logged. At the end of treatment, participants were asked questions about the helpfulness of the program, the logging, and use of the WOOP app.

Psychiatric Diagnostic Screening Questionnaire (PDSQ)

The PDSQ is a brief self-report true-false questionnaire designed to screen current psychiatric conditions (Zimmerman & Chelminski, 2006). We used psychosis, substance use disorder, and alcohol use disorder (6 items each) scales to assess exclusion criteria. Participants who endorsed items on these scales were allowed to participate after interviewers reviewed symptom severity. Participants also completed social anxiety disorder, generalized anxiety disorder, major depressive disorder, panic disorder, and post-traumatic stress disorder subscales. Psychosis items referred to past 2 weeks; other items pertained to past 6 months.

Inclusion and exclusion criteria

Study inclusion criteria were as follows:

- age 18–70;

- anger or Verbal aggression BPAQ-SF or BPAQ Physical Aggression scores at least one SD above the normative mean;

- at least 6 incidents of verbal aggression, physical aggression, self-harm, or aggression against property in the past 3 months, determined by MOAS interview;

- feelings trigger action emotion-related impulsivity score at least one SD above the normative mean;

- willingness to sign a treatment contract indicating commitment to change.

Exclusion criteria were conditions that could interfere with ability to fully take part in the treatment, including poor English proficiency, neurological disorders (e.g., dementia, traumatic brain injury), and current psychosis, alcohol use disorder or substance use disorder indicated by the PDSQ.

Results

Sample characteristics are shown in Table 2. Among completers, the median number of days to complete the intervention was 34 days (range 23 to 195). On average, completers spent

about 3 h taking the online sessions. The 16 participants who progressed to logging received a median of 40 log prompts and completed an average of 31 logs (78%), with substantial variability (7 to 77 completed). Participants used the WOOP App an average of 5 times and reported making progress on their WOOP goal an average of 49% of the time.

Twelve of the 13 completers responded to open-ended questions about the program. Of these, 10 described improvement in their anger, such as greater awareness and understanding of anger. When asked about specific skills that had been most helpful for them, 6 of those 10 participants cited the relaxation exercises and 4 cited learning to leave the situation. On scales of 1 (not at all) to 5 (a lot), participants rated the logs as useful overall (M = 3.85, SD = 1.35) and in learning about anger (M = 4.0, SD = 1.29), and moderately burdensome (M = 2.85, SD = 1.52).

Outcomes

Alpha was set to .05, with two-tailed tests. MOAS severity ratings decreased 45% from pre-treatment to post-treatment (paired samples $t(12) = 2.62$, $p = .02$, Cohen's $d = .73$), and these gains were maintained at three-month follow-up (post-treatment to follow-up paired samples $t(10) = 1.07$, $p = .31$). Visual inspection of individual trajectories (Fig. 2) highlighted considerable variability in treatment response, with the most substantial changes occurring for those with higher MOAS scores at baseline.

Beyond interviewer-rated aggression severity, program completers showed substantial reductions in self-reported anger ($t(10) = 3.18$, $p = .01$, $d = 1.00$), verbal aggression ($t(10) = 4.00$, $p = .003$, $d = 1.32$), physical aggression ($t(10) = 3.55$, $p = .005$, $d = 1.03$), and emotion-related impulsivity ($t(10) = 3.43$, $p = .006$, $d = 1.06$) from pre-treatment to post-treatment. As shown in Table 2, these treatment gains were sustained at three-month follow-up.

Post-waitlist (pre-treatment) outcome data were collected on eight of the nine participants randomized to waitlist. Comparing pre-waitlist to post-waitlist, participants evidenced a substantial increase in interviewer-rated aggression severity ($t(7) = -3.23$, $p = .01$, $d = 1.14$), and small, statistically insignificant reductions in self-reported anger ($t(7) = .24$, $p = .82$, $d = .09$) and verbal aggression ($t(7) = .89$, $p = .41$, $d = .34$). However, from pre- to post-waitlist, participants reported more substantial declines in self-reported physical aggression ($t(7) = 2.36$, $p = .06$, $d = .90$) and emotion-related impulsivity ($t(7) = 2.69$, $p = .03$, $d = .88$).

Discussion

We present findings from the first treatment designed to address aggression in the context of high emotion-related impulsivity. This type of impulsivity is a substantial concern for those with bipolar disorder even after remission, and it helps explain persistent aggression after remission. In response to general advertising for people with aggression concerns, 10% of those who enrolled in our program reported being in treatment for bipolar disorder. Here, we present initial information about the feasibility, acceptability, and change in outcomes of aggression and impulsivity from that subgroup.

Participants were diverse in age and ethnicity, and many indicated serious clinical concerns. Our sample was 75% female, which may indicate that men with these concerns were less likely to self-identify and seek out this type of program. Our gaps in enrolling men are important given that men may be more likely to engage in physical violence than women are. Almost all participants reported lifetime psychotherapy (half currently). Half reported a history of physical abuse or assault, and almost half reported a history of sexual abuse or assault. Two participants reported that their aggression had led to legal problems. Most endorsed comorbid syndromes.

Regarding feasibility, attrition rates in our program were high. Only 13 of the 21 participants completed treatment, which is similar to medication non-adherence rates in bipolar disorder (Gaudiano, Weinstock, & Miller, 2008). Levels of attrition have ranged from 23% to 41% in remote interventions for aggression (Howie & Malouff, 2014; Hargrave, Hiatt, Alexander, & Shaffer, 2008), and from 10 to 50% in psychological interventions for bipolar disorder. Stated simply, treatment engagement may be a challenge for online programs, treatment of aggression, and treatment of bipolar disorder (Leclerc, Mansur, & Brietzke, 2013; MacDonald, Chapman, Syrett, Bowskill, & Horne, 2016). Attrition might have been lowered in this program had we eliminated the somewhat burdensome self-monitoring component or included telephone coaching. Although attrition was high, completers were able to finish online modules in an average of 3 h, and they registered an average of 31 self-monitoring logs.

Regarding acceptability, 10 of 12 participants completing open-ended probes described the program as helpful in reducing aggression. On average, participants rated logging as moderately burdensome but also helpful.

Quantitative data suggests that the intervention led to meaningful declines in interviewer-rated aggression severity. Interviewer-rated aggression declined in severity by 45% from pre-treatment to post-treatment, with a moderate effect size, $d = .73$. Treatment gains persisted through 3-month follow-up. In contrast, interviewer-rated aggression worsened during the six-week wait-list control period. The treatment effects are larger than those reported in a meta-analysis of cognitive-behavioral aggression treatments offered transdiagnostically ($d = .41$; (Saini, 2009)). Those who began the program with more severe problems of aggression showed larger gains.

Participants also self-reported meaningful declines in levels of anger, verbal aggression, physical aggression, and emotion-related impulsivity, d's = 1.00 to 1.32. Nonetheless, self-ratings improved during the wait list period, modestly so for anger and verbal aggression, and substantially for physical aggression and emotion-related impulsivity.

The self- vs. interview-based discrepancies in physical aggression ratings could reflect self-rating bias or scale content–the OAS weights the severity of aggressive incidents, whereas the BPAQ items cover a broader and milder range of incidents without weighting severity. Caution is warranted in that self-perceptions of physical aggression and impulsivity may be volatile across time for those with bipolar disorder, and this will need to be considered in

planning future treatment trials, perhaps by gathering more intensive data or informant ratings.

Beyond the need for more intensive data on outcomes, we acknowledge other limitations. The small sample size precludes analyses to predict treatment attrition or variability in outcomes. We did not include an active control condition. We did not conduct diagnostic interviews, gather detailed information concerning the severity or treatment of bipolar symptoms, or measure self-awareness regarding aggression. Parallel with other aggression intervention studies (Saini, 2009), we were unable to gather long-term follow-up data.

Notwithstanding limitations, the current findings are encouraging. Aggression has major social and legal consequences. To date, the major approach to aggression in bipolar disorder has been pharmacological treatment to reduce mood symptoms (Sachs et al., 2009), but some with bipolar disorder remain concerned about aggression even after mood symptoms dissipate. Despite this, we are unaware of psychological interventions tested for aggression in the context of bipolar disorder. More broadly, data from community-based research indicates that only one-third of persons who reported recurrent clinical problems with aggression received treatment to address aggression in their lifetime (Kessler, Coccaro, Fava, Jaeger, Jin, & Walters, 2006). This suggests that treatment needs to be more accessible, a gap that online delivery may help address. Our brief online intervention showed effect sizes larger than more intensive cognitive behavioral programs for aggression. With more careful testing, our pilot findings suggest the promise of an affordable intervention designed to tackle a significant mental health problem.

Acknowledgements

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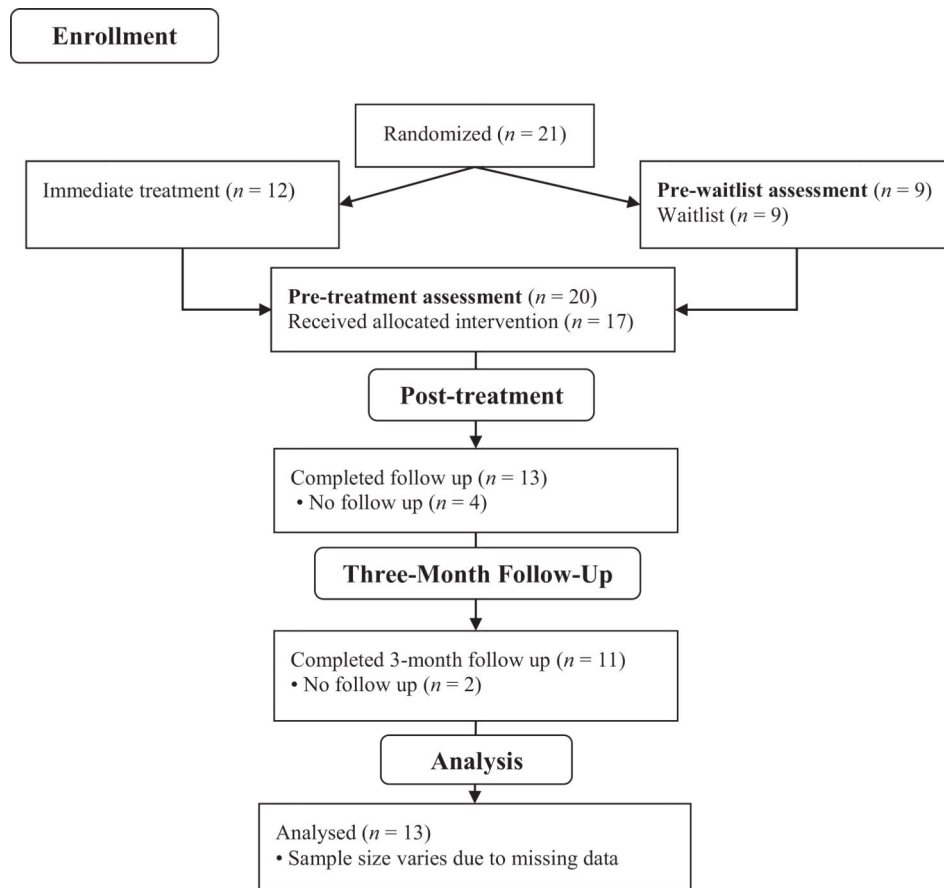
Figure 1.
Participant flow through waitlist and treatment.

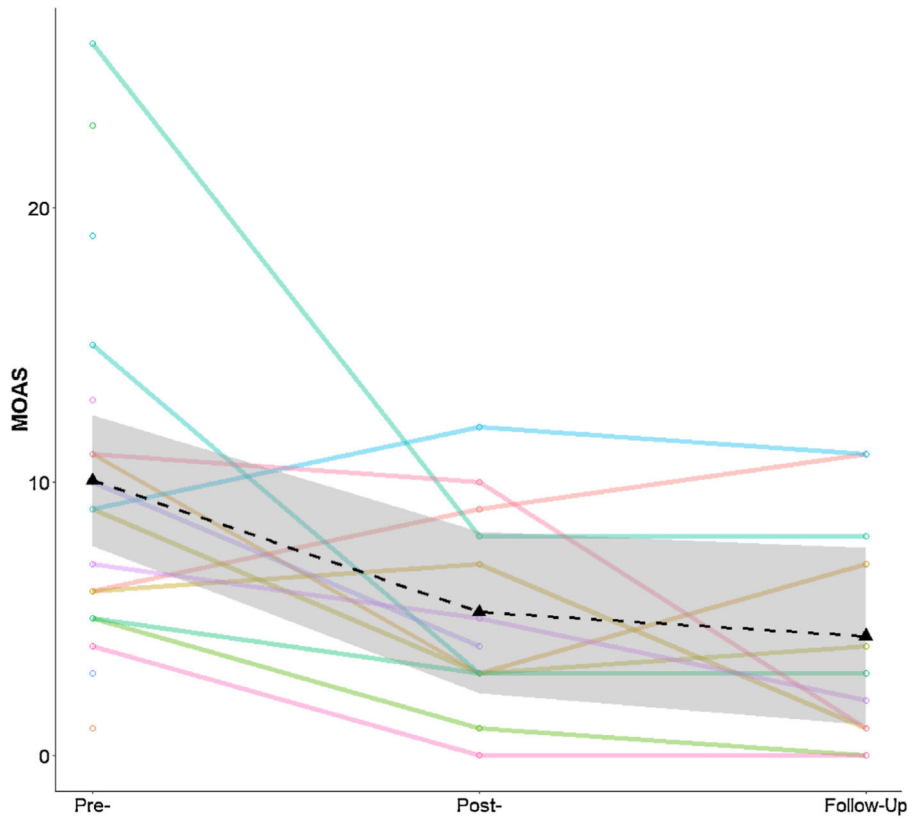**Figure 2.**
Spaghetti plot visualization of individual participants' MOAS trajectories ($n = 20$).

Table 1

Timing of measure administration.

	Screening and Study Entry	Pre-Waitlist	Pre-Treatment	Post-Treatment	3-month follow-up
Demographic and medical questions	X				
PDSQ Alcohol, Substance, and Psychosis scales	X				
PDSQ Depression and Anxiety scales			X		
Feelings Trigger Action	X	X	X	X	X
BPAQ	X	X	X	X	X
MOAS	X	X	X	X	X
Treatment helpfulness				X	

BPAQ: Buss-Perry Aggression Questionnaire, MOAS: Modified Overt Aggression Scale, PDSQ: Psychiatric Diagnostic Screening Questionnaire.

Table 2

Descriptive statistics for sample.

	n	M	SD
Age (range 20–60)	21	34.05	11.23
Years of education	21	14.05	2.37
Gender	20		
Female		15	75%
Male		5	25%
Race/Ethnicity	21		
Black or African-American		2	9.5%
Hispanic or Latino		2	9.5%
White		7	76.2%
Other		1	4.8%
Legal consequences	17		
Yes		2	11.8%
Lifetime medication	21		
Bipolar disorder		21	100%
Depression		19	90.5%
Substance or alcohol abuse		1	4.8%
Other		2	9.5%
Therapy	21		
Lifetime		17	81%
Current		11	52.4%
PDSQ scores above threshold	21		
Social anxiety disorder		17	81%
Generalized anxiety disorder		16	76.2%
Major depressive disorder		15	71.4%
Panic disorder		10	47.6%
Post-traumatic stress disorder		8	38.1%
Psychosis		3	14.3%
Alcohol use disorder		1	4.8%

	n	M	SD
Substance use disorder		1	4.8%
Lifetime trauma	16		
Physical abuse/assault		11	68.8%
Sexual abuse/assault		9	42.9%
Modified Overt Aggression Scale			
Pre-treatment	20	7.67	4.53
Post-treatment	13	5.23	3.66
3-month follow-up	11	4.36	4.2
Buss Perry Aggression Questionnaire			
Anger			
Pre-treatment	18	10.36	2.18
Post-treatment	11	7.71	2.78
3-month follow-up	11	7.27	2.72
Verbal aggression			
Pre-treatment	18	9.4	2.27
Post-treatment	11	7.64	2.31
3-month follow-up	11	6.73	2.37
Physical aggression			
Pre-treatment	18	27.27	7.82
Post-Treatment	11	16.82	5.82
3-month follow-up	11	17.82	6.56
Feelings trigger action			
Pre-treatment	19	3.59	.63
Post-treatment	11	3.02	.94
3-month follow-up	11	3.04	.80