



University of Utah

UNDERGRADUATE RESEARCH JOURNAL

**THE ROLES OF EMOTION DYREGULATION AND HOPELESSNESS IN THE
DELINQUENT AND AGGRESSIVE BEHAVIOR OF JUSTICE-INVOLVED YOUTH**

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Poor emotion regulation strategies have been associated with a host of negative outcomes for youth. Research suggests that emotion dysregulation is associated with committing delinquent and aggressive acts. Additionally, poor emotion regulation may be associated with feelings of hopelessness, which in turn has also been shown to be related to delinquency and aggression. However, whether the relation between emotion dysregulation and aggression or delinquency may be strengthened by feelings of hopelessness remains ambiguous. A sample of 278 justice-involved youth (boys = 221, girls = 57) completed self-report measures of emotion dysregulation, hopelessness, delinquent acts, and aggression. Multiple regressions were run to examine the association between these factors. While no results were significant, the findings have numerous implications for future research.

Poor emotion regulation has long been associated with an assortment of negative outcomes. Although its definition and conceptualization vary, emotion regulation can be generally defined as the process of evaluating the emotions one has, and then responding to or modifying how one expresses them (Gross, 2014, p.6). Consequently, emotion dysregulation refers to dysfunctions in this process (Gross, 2014, p. 59), resulting in a person's overcontrol or undercontrol of their emotional responses. A growing body of literature has found that two negative outcomes associated with emotion dysregulation include delinquency and aggression (Robertson, Daffern, & Bucks, 2014; Rodriguez, Tucker, & Palmer, 2016; Marsee, Lau, & Lapré, 2014; Garofalo, Holden, Zeigler-Hill, & Velotti, 2016). For example, Garofalo et al. (2016) found that incarcerated offenders reported higher levels of emotion dysregulation compared to a community sample, suggesting that limited emotion regulation strategies may be associated with higher rates of delinquency or aggressive acts. Additionally, previous research has found emotion dysregulation to be a predictor of juvenile arrests (Kemp et al., 2017), consistent with the hypothesis that problems regulating emotions can lead to poorly regulated behavior and impulsivity, leading to subsequent involvement with the justice system. In addition to delinquent behavior, emotion dysregulation has been implicated in aggression (Marsee, Lau, & Lapré, 2014). Specifically, prior research found that maladaptive emotion regulation strategies are associated with aggression (Scott, DiLillo, Maldonado, & Watkins, 2015) and that difficulties in emotion regulation may lead to both proactive and reactive aggression (Skripkauskaitė et al., 2015). Ultimately, emotion dysregulation has the potential to lead to a host of negative behavioral and psychological outcomes (Rajappa, Gallagher, & Miranda, 2012).

Although emotional dysregulation has clear implications for youth involvement of delinquent and aggressive behavior, other research has pointed to a different emotional reaction, that of hopelessness. Hopelessness reflects one's negative expectations of the future (Abramson, Metalsky, & Alloy, 1989) and may result from diminished access to effective strategies to regulate emotions (Vatan et al., 2014; Miranda et al., 2014; Rajappa et al., 2012; Palmier-Claus, Taylor, Gooding, Dunn, & Lewis, 2012). Therefore, hopelessness may be related to emotion dysregulation (Vatan, Lester, & Gun III, 2014; Miranda, Tsypes, Gallagher, & Rajappa, 2013). In one sample of young incarcerated offenders, Biggam and Power (1997) found that nearly 40% of the youth in their sample reported high levels of hopelessness. Similarly, Biggam and Power (2002) also found high levels of hopelessness in a sample of young offenders aged 16-21 years. Moreover, youth with moderate to high levels of hopelessness have been shown to be 1.5 to 13 times more likely to perpetrate delinquent or violent behavior (Duke, Borowsky, Pettingell, & McMorris, 2011). Additionally, hopelessness has been linked to aggression. In one sample of inner-city youth, high levels of hopelessness were significantly correlated with both aggressive and violent acts (Bolland, 2003). Hopelessness may be related to increased aggressive and delinquent behavior because youth with high levels of hopelessness may tend to operate with a negative cognitive framework that diminishes and impairs healthy decision-making and coping abilities, leading to delinquency and aggression (Duke, Borowsky, Pettingell, & McMorris, 2011). Taken together, previous research suggests that emotion dysregulation may interact with hopelessness to predict youth aggressive and delinquent behavior.

Past literature concerning the impact of emotion dysregulation on delinquency does not provide a complete picture of how this construct may interact with feelings of hopelessness to explain youths' delinquent and aggressive behavior. To further extend past research on the related topics, the current study sought to examine the associations between emotion dysregulation, aggression, and delinquent behavior in a sample of justice-involved youth. Based upon previous research, we hypothesized that hopelessness will strengthen the relation between emotion dysregulation and both delinquency and aggression. The results from this study may be

able to provide us with a better understanding of the underlying mechanisms that contribute to youths' involvement in delinquent and aggressive behavior, which may ultimately help to inform and develop intervention and prevention programs aimed at reducing youth justice-involvement and recidivism.

Method

Participants

Participants consisted of 278 youth (221 boys, 57 girls) recruited from a juvenile detention center located in the Western United States. The participants were between the ages of 12 and 18 years old ($M = 16.02$, $SD = 1.26$). As for ethnicity, 39.6% of the youth in the sample identified as White, 38.1% as Latino(a)/Hispanic, 8.6% as Biracial/Multiracial, 5.8% as Black/African American, 2.5% as Native American, 2.5% as Pacific Islander/Native Hawaiian, 1.8% as Asian/Asian American, and 1.1% as other.

Procedure

Study procedures were approved by the institutional review boards of the University of Utah as well as the Utah Department of Human Services. During visiting hours at the detention center, research assistants approached youths' legal guardian to obtain informed consent to talk to their child. If consent was obtained, the youth, if interested in participating in the study, provided informed assent. Following assent, an interview was conducted in a private visiting room at the detention center and self-report measures were administered on a laptop. Legal guardians and youth were not offered compensation.

Measures

Emotion dysregulation. Developed by Gratz & Roemer (2004), the Difficulties in Emotion Regulation Scale (DERS) is a brief, well-validated 36-item, self-report questionnaire designed to assess multiple aspects of emotion dysregulation. The DERS includes six scales: (1) nonacceptance of emotional responses, (2) difficulties engaging in goal direction behavior, (3) impulse control, (4) lack of emotional awareness, (5) limited access to emotion regulation strategies, and (6) lack of emotion clarity. The measure yields a total score as well as scores on each of the six scales derived through factor analysis. Each item on each of the six scales is rated on a 5-point Likert scale that ranges from 1 (almost never) to 5 (almost always). Higher scores are indicative of greater dysregulation. This project used the total scale. The internal consistency of the current sample, the alpha, of the DERS was .85.

Hopelessness. The Kazdin Hopelessness Scale for Children (KHSC; Kazdin, Rodgers, & Colbus, 1986) was modeled after the scale developed with adults (Beck, Weissman, Lester, & Trexler, 1974) to assess perceptions of hopelessness. The shortened version used in the current study consists of 8 items such as, "I might as well give up because I can't make things better for myself" and "I don't think I will get what I really want" which reflect negative expectations of the future. Youth responded "yes" or "no" to each item and the scale was scored so that higher scores indicated greater levels of hopelessness or negative expectations for the future. Scores could range from 0 to 8, and in the current sample, the alpha for the KHSC was .67.

Aggressive behavior. How Friends Treat Each Other (HFTEO; Bennett, Guran, Ramos, & Margolin, 2011) is a measure of aggression against peers and focuses on four types of aggressive behavior: electronic aggression, psychological aggression, physical aggression, and coerced intimacy. For each item, participants were asked in the past year "Have you done any of the following things to any of the following people?" Youth indicated on a 5-point Likert scale the number of times they participated in each event and responses ranged from 1 - *never happened* to 5 - *happened more than 10 times*. Electronic aggression includes 4 items such as, "Sent mean or hurtful message via e-mail, text message, Facebook, Myspace, or Twitter." Psychological Aggression includes 15 items such as, "Said things just to make someone angry or

hurt someone's feelings." Physical Aggression includes seven items such as, "Kicked, hit, or punched someone." Coerced Intimacy includes four items such as, "Touched someone sexually when they didn't want it." The responses were summed to produce a total perpetration score. In the current sample, the alpha for HFTEO was .93.

Delinquent behavior. An adapted version of the Self-Report of Delinquency scale (SRD; Elliot, Huizinga, & Ageton, 1985) was used to assess youths' involvement in delinquent activities. The adapted scale was developed by Feiring, Miller-Johnson, and Cleland (2007) to include additional items related to lower-level status offenses that are commonly seen among certain subsets of youth, including girls. The scale used in the current study included 48 items that inquire as to whether the youth has participated in specific activities (e.g., truancy, theft, property destruction, aggression against others, substance use) within the last year (0= *no*, 1= *yes*). A total score of SRD was obtained by summing all of the items, and responses could range from 0 to 48. In the current sample, the alpha for SRD was .92.

Data Analysis

All variables of interest were checked for potential outliers and normality prior to conducting data analyses. After examining diagnostic test results, histograms, and scatterplots, no indication was found of outliers, but there was indication of skewness in our aggression variable. Therefore, the variable for aggressive behavior was log transformed prior to analysis. The emotion regulation variable had 0.4% missing data, the delinquency variable had 18% missing data, the aggression variable had 18.7% missing data, and the hopelessness variable had 18.3% missing data. All missing data were assumed to be missing at random and were managed using multiple imputation in SPSS. Before conducting analyses, our predictor variables, emotion dysregulation and hopelessness, were mean-centered. In order to investigate the relation between emotion dysregulation and aggressive and delinquent behavior and whether hopelessness moderated these effects, an interaction variable was created (emotion dysregulation x hopelessness) and we ran two interaction regressions. If the results were significant, two moderation models using the Hayes (2018) PROCESS macro, which tests for moderation on direct effects with bootstrapped estimates of the confidence interval, would be run in order to decompose the interactive effects. All analyses were conducted using SPSS version 25.

Results

Descriptives

In the current sample, 83.2% of youth reported engagement in 6 or more delinquent activities. With regards to aggressive behavior, 50.2% of youth reported participating in physical aggression, 76.4% psychological aggression, 11.6% sexual aggression, and 69.5% electronic aggression. Means, standard deviations, and correlations can be found in Table 1.

Regressions

To investigate whether hopelessness would act as a moderator between emotion dysregulation and delinquency, we ran a linear regression. Results indicated that there was no significant relationship between emotion dysregulation and delinquency ($B = .058, p = .300$) and no significant relationship between hopelessness and delinquency ($B = .857, p = .537$). There was also no significant interactive effect between emotion dysregulation and hopelessness on self-reported delinquency ($B = -.009, p = .739$). These results did not support the hypothesis that emotional dysregulation would interact with hopelessness to predict delinquent behavior.

To investigate whether hopelessness would moderate the relation between hopelessness and aggression, a linear regression was run. Results showed no significant relationship between emotion dysregulation and aggression ($B = .002, p = .508$), such that emotion dysregulation was not a significant predictor of aggression. There was also no significant relationship between hopelessness and aggression ($B = -.004, p = .961$). Additionally, we found no significant

interactive effect between emotion dysregulation and hopelessness on aggression ($B = .000, p = .886$). Therefore, the results from our second linear regression also did not support our prediction.

Discussion

Research to date has not investigated the underlying mechanisms among emotion dysregulation, delinquency, and aggressive behavior. Therefore, the current study investigated the impact of youths' feelings of hopelessness on the link between emotion dysregulation and delinquency and aggression in a sample of justice-involved adolescents. The first aim of the study was to examine whether hopelessness strengthened the relation between emotion dysregulation and delinquent behavior. Neither emotion dysregulation nor hopelessness was significantly related to delinquent behavior. Along with this, there was no significant interactive effect between hopelessness and emotion dysregulation and delinquent behavior. This was unexpected given the findings of previous research done by Garfalo et al. (2016), which suggested that limited emotion regulation strategies are associated with higher rates of delinquency, as well as other research that has supported the finding of emotion dysregulation being a predictor of juvenile arrests (Kemp et al., 2017). The low correlation between hopelessness and delinquent behavior was also unexpected, given the multitude of past studies linking the two variables (Vatan, Lester, & Gun III, 2014; Miranda, Tsypes, Gallagher, & Rajappa, 2013; Biggam and Power, 1997, 2002; Duke, Borowsky, Pettingell, & McMorris, 2011). This finding suggests that within our sample, neither emotion dysregulation nor hopelessness may have been considerable factors in the commitment of delinquent acts.

The second aim of the study was to evaluate whether hopelessness strengthened the relationship between emotion dysregulation and aggressive behavior. Neither emotion dysregulation nor hopelessness were significantly related to aggressive behavior. Additionally, there was no significant interactive effect between hopelessness and emotion dysregulation on aggression. This finding was also unexpected given that past findings have found that poor emotion regulation strategies are associated with aggressive behavior (Marsee, Lau, & Lapré, 2014; Scott, DiLillo, Maldonado, & Watkins, 2015) and additional research has suggested that emotion dysregulation is a predictor for both proactive and reactive aggression (Skripkauskaitė et al., 2015). Taken together, these findings suggest that neither emotion dysregulation nor hopelessness may have been substantial factors in the participation in aggressive behavior within our sample.

Though the hypotheses were not supported by the data, our results suggest that some other underlying mechanism other than hopelessness may contribute to the relation between emotion dysregulation and both aggression and delinquency. It is possible that hopelessness and emotion dysregulation are two separate constructs that do not interact in the way expected for this study. However, contrary to past findings, no significant association between either emotion dysregulation and delinquency or aggression were found. This study used a similarly size sample and measures as that in previous research, therefore, our specific sample may have simply failed to capture both the main effects supported by previous research, as well as the interaction effect that was being explored in this study.

Future research should replicate the relation between emotion dysregulation and both delinquency and aggression. Since it is unclear whether our insignificant interaction effect is due to our sample or due to the lack of an effect, future efforts may also find it beneficial to investigate hopelessness, as well as other variables that may reasonably moderate the relation between emotion dysregulation and other negative outcomes relevant to the juvenile justice system. It may also be beneficial to investigate whether specific types of emotion dysregulation, such as difficulty with controlling behavior or difficulty with goal directed activity, are related to

hopelessness, delinquent behavior, and aggression. Given that the current study used a measure of overall emotion dysregulation, it is possible that the effects of specific types of emotion dysregulation on delinquent and aggressive behavior were missed. Future research may also benefit by examining different types of aggression within a sample, such as looking at the specific effect of emotion dysregulation on physical electronic, sexual and psychological aggression separately

. For example, it is possible that emotion dysregulation and hopelessness may be more strongly related to physical aggression. Future directions may also be taken to investigate how emotional dysregulation and hopelessness relate to delinquency, as well as whether a strong relation between these two factors relate to the participation of specific types of delinquent acts over others due to the negative future outlook that characterizes hopelessness. Finally, this study relied exclusively on self-report measures, which come with limitations. Future research may also benefit by investigating emotion dysregulation and aggression using behavioral or physiological measures rather than just self-report measures.

Although the results of the current study were not consistent with hypotheses or previous research, the current study had a number of strengths. First, this study sought to address a gap in the current literature that has not investigated possible mechanisms underlying the link between emotion dysregulation and youths' behavioral outcomes. Additionally, this study sought to test unique associated between aggression and delinquency. This study also used an appropriate sample size given the large range of sample sizes used in previous research investigating emotion dysregulation and delinquency (Garofalo et al., 2016; Kemp et al., 2017), emotion dysregulation and aggression (Skripkauskaitė et al., 2015; Scott, DiLillo, Maldonado, & Watkins, 2015) and emotion dysregulation and hopelessness (Vatan et al., 2014; Miranda et al., 2014; Rajappa et al., 2012; Palmier-Claus, Taylor, Gooding, Dunn, & Lewis, 2012). However, in light of these strengths, the findings of this study should be interpreted in the context of some relevant limitations. First, our sample was limited to the individuals found in a single juvenile detention facility, which increases the variability of the sample and limits the generalizability of our results. Another limitation is that all data used for this study came from self-reports. As a result, the data could have been biased given that individuals prefer to portray themselves more positively rather than realistically due to social expectations or demands. Additionally, our data was cross-sectional, therefore we were unable to capture reported feelings and behaviors over time. Future studies using longitudinal data may find differing results than those of this study, such that increased hopelessness and emotion dysregulation leads to increased delinquent and aggressive behavior over time. Lastly, this study was limited in its use of only one measure per variable, instead of using multiple measures to capture emotion dysregulation, hopelessness, aggression, and delinquent behavior.

In conclusion, within a sample of justice-involved youth, the current study did not find hopelessness to be a moderator between emotion dysregulation and delinquent and aggressive behavior within a sample of justice-involved youth. Inconsistent with hypotheses, emotional dysregulation did not interact with hopelessness to predict youths' aggression or delinquent behavior, which is in contrast to previous literature. Further investigation into how emotion dysregulation and other constructs may interact to explain youths' delinquent and aggressive behavior could have significant implications for intervention efforts and prevention programs. This will ultimately contribute to efforts in reducing youth recidivism and negative behavioral outcomes.

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Table 1.

Means, Standard Deviations, and Bivariate Correlations

Variable	Aggression	Delinquency	Hopelessness	ED
Aggression	-	-	-	-
Delinquency	0.38**	-	-	-
Hopelessness	0.12*	0.10	-	-
ED	0.14*	0.09	0.25**	-
<i>M</i>	10.73	13.48	1.73	45.06
<i>SD</i>	14.19	7.83	1.63	12.81
Range	0 - 109	0 - 35	0 - 8	3 - 76

Note. * $p < .05$. ** $p < .01$; ED = Emotion dysregulation.