

RUNNING HEAD: Negative urgency, alexithymia, and dysregulated behaviors

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Negative Urgency Fully Mediates the Relationship Between Alexithymia and Dysregulated Behaviors

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Abstract

Previous research documents a relationship between alexithymia and dysregulated behaviors, but fails to explore mechanisms that may account for this relationship. The current study sought to determine whether negative urgency would mediate the relationship between alexithymia and dysregulated behaviors. We hypothesized that positive relationships would exist among alexithymia, negative urgency, and dysregulated behaviors. We also hypothesized that negative urgency would mediate the relationship between alexithymia and dysregulated behavior. Results indicated that positive correlations exist between alexithymia, negative urgency, and dysregulated behaviors. Additionally, our hypothesis that negative urgency would mediate the relationship between alexithymia and dysregulated behavior was supported. The results suggest that negative urgency may be responsible for dysregulated behaviors that are observed in those who score high on alexithymia.

Keywords: Negative urgency, alexithymia, dysregulated behaviors, emotion regulation

Introduction

Dysregulated behaviors have been defined as behaviors that are difficult to control, and often result in functional impairment for the affected individual (Selby & Joiner, 2009). Although psychological disorders have a wide array of symptoms, virtually all of them are characterized by some form of dysregulated behavior that usually impacts quality of life in a negative way. These behaviors can range from intrapersonal (e.g., binge eating and self-injury) to interpersonal (e.g., excessive reassurance seeking and physical fights). Why some individuals engage in these behaviors while others do not remains a somewhat elusive question. The purpose of this study was to evaluate potential affective variables which may contribute to behavioral dysregulation—specifically alexithymia and negative urgency.

Alexithymia has been repeatedly linked to dysregulated behaviors. Sifneos (1973) conceptualized alexithymia as a multi-faceted construct involving 1) difficulty identifying emotions and distinguishing them from bodily sensations, 2) difficulty describing emotions, and 3) a concrete thinking style. Researchers have theorized that the inability to understand affective and physiological experiences inherent in alexithymia might prompt individuals to engage in maladaptive behaviors in an effort to regulate emotions.

One type of behavior linked to alexithymia is binge eating. Wheeler and colleagues (2005) found that alexithymia was positively correlated with binge eating in a sample of females. Similarly, Larsen et al. (2006) found that alexithymia moderates the relationship between biological sex and emotional eating, such that men with high levels of alexithymia are at the greatest risk for emotional eating. In a sample of adult outpatients diagnosed with BED, Carano and colleagues (2006) found that alexithymia was positively correlated with the severity of binge

eating behaviors. Additionally, Speranza and colleagues (2007) found that alexithymia predicted eating disorder treatment outcome in a three year prospective study, even when controlling for depressive symptoms and eating disorder severity. This is a particularly important finding in that it indicates that high levels of alexithymia can interfere with treatment response even more than the actual severity of the presenting problem.

In addition to binge eating, there are other dysregulated behaviors that have been shown to relate to alexithymia. Taylor and colleagues (1990) found that 50% of substance dependent males admitted to a drug and alcohol rehabilitation program were characterized as alexithymic. Similarly, Haviland and colleagues (1988) found that approximately 50% of individuals diagnosed as alcohol dependent were characterized as alexithymic. These numbers are significantly greater than the reported prevalence of alexithymia in the general population, which has been estimated to fall between 10 and 15% (Rybakowski et al., 1988; Parker et al., 1989), and suggests that alcohol and drug abuse is another example of a maladaptive behavior that may be used to modulate negative affective states when one is incapable of doing so in an adaptive way.

Several studies have also found that alexithymia appears to play a role in treatment outcome for substance abusers. For example, Loas and colleagues (1997) conducted a one year follow-up on individuals admitted to a psychiatric facility for alcohol treatment. Results suggested that individuals who remained abstinent from alcohol use one year post-treatment had significantly lower scores on alexithymia measures. Ziolkowski and colleagues (1995) also found similar results, in that scores on an alexithymia measure were inversely related to time of abstinence from alcohol, such that higher scores on alexithymia predicted fewer months of abstinence.

Aside from the aforementioned behaviors, self-injurious behaviors have also been significantly correlated with alexithymia. In one study (1996), Zlotnick and colleagues found that rates of alexithymia were significantly higher among individuals who reported a history of self-injury. Interestingly, 79% of these subjects also reported a history of childhood sexual abuse. This finding is important, as it highlights the likelihood that alexithymia may be particularly troublesome for those who have experienced past trauma, rendering them less able to appropriately deal with negative affect. In turn, they may attempt to alleviate negative affect through dysregulated behaviors. In fact, Paivio & McCulloch (2004) found that alexithymia mediated the relationship between childhood abuse and self-injurious behavior. In other words, alexithymia accounted for the self-injurious behaviors that were seen in individuals with past trauma, such as abuse. In addition to negatively impacting individuals directly, the above findings also suggest that alexithymia may have a powerful, negative impact on treatment outcomes.

Clearly, alexithymia is implicated in a host of negative behavioral outcomes. However, an important question left unexplained by the above findings is, “why does the lack of understanding and expression of emotions have such a powerful influence over dysregulated behaviors?” In other words, there is apparent value in understanding why individuals with high levels of alexithymia who experience negative affect seem to engage in dysregulated behaviors so frequently, while other individuals may simply cry, ruminate, or develop vegetative symptoms of depression. Identifying mediators in the relationship between alexithymia and maladaptive behaviors may illuminate the relationship between these two variables.

One potential mediator that could explain the relationship between alexithymia and dysregulated behaviors, serving as the mechanism through which these behaviors are developed

and sustained, is negative urgency (Whiteside & Lynam, 2001; Cyders, Smith, Spillane, Fischer, Annus, & Peterson, 2007). Defined as the degree to which an individual tends to act rashly in response to negative affect, negative urgency has been linked to maladaptive behaviors, such as binge eating, in multiple studies in both clinical and nonclinical samples (Anestis, Smith, Fink, & Joiner, 2008; Fischer, Anderson, & Smith, 2004; Fischer, Smith, & Anderson, 2003).

Specifically, Anestis, Selby, and Joiner (2007) found that residual change in negative urgency over a six-week period predicted residual change in bulimic behaviors such that increases in negative urgency were accompanied by increases in binge eating and purging. Also, Fischer and Smith (2008) found that negative urgency interacted with positive emotional expectancies of eating to predict binge eating behaviors. This finding indicates that high levels of negative urgency paired with a strong belief that binge eating is capable of reducing negative emotions vastly increases the likelihood that an individual will regularly binge eat.

To our knowledge, no prior work has specifically examined the relationship between negative urgency and alexithymia; however, given that both variables correlate with dysregulated behaviors, it seems reasonable to investigate whether a significant correlation exists between these two variables as well. Assuming alexithymia and negative urgency correlate such that high levels of one correspond with high levels of the other, an additional consideration worth empirical investigation is the possibility that negative urgency mediates the relationship between alexithymia and maladaptive behaviors. It may be that the relationship between alexithymia and behavior is explained by a tendency on the part of individuals with high levels of alexithymia to act rashly in an attempt to immediately reduce psychological and physiological sensations associated with negative affect. If this is the case, negative urgency could be thought of as the

mechanism that drives dysregulated behaviors in individuals who experience difficulty recognizing and expressing their emotions.

To investigate these possibilities, we designed a study in which 217 undergraduates filled out a series of questionnaires regarding affective and behavioral tendencies. We hypothesized that there would be significant positive correlations between alexithymia and maladaptive behaviors, alexithymia and negative urgency, and negative urgency and maladaptive behaviors. Additionally, we anticipated that negative urgency would mediate the relationship between alexithymia and dysregulated behaviors. Should the results conform to our hypotheses, this would indicate that negative urgency may be the driving force behind behavioral tendencies in individuals who exhibit elevated levels of alexithymia.

Method

Participants consisted of 217 undergraduate students at a large, southeastern university. All students were drawn from a pool of students from introductory psychology courses; this pool of students is 83% female, 77% Caucasian, 10% Hispanic/Latino, 6% African, 3% Asian, and 3% other ethnicity, with ages of participants ranging between 17-53 (mean = 19.31, SD = 4.23). The study was approved by the university institutional review board and all participants provided full informed consent. All students were free to participate in the study if they wished, and upon completing informed consent all participants completed a battery of measures. All participants received course credit for participating in the study.

Measures

Toronto Alexithymia Scale-20 (TAS-20; Bagby, Parker, & Taylor, 1994; Kooiman, Spinhoven, & Trijsburg, 2002). The TAS-20 is a 12-item measure of difficulty with identification and description of feelings. Items on this scale include: "I have feelings that I can't quite identify"

and “It is difficult for me to find the right words for my feelings.” Items are rated on a 5-point likert-type scale of 1 (strongly disagree) to 5 (strongly agree). Although the TAS-20 includes subscales, scores on all items were combined for an overall measure of alexithymia in this study. The combination of the subscales was supported by the adequate internal consistency of the items in this sample ($\alpha = .78$).

The UPPS Behavior Scale (Whiteside & Lynam, 2001). The UPPS is a multidimensional measure of impulsivity that assesses four distinct tendencies (negative urgency, lack of premeditation, lack of perseverance, and sensation seeking) of impulsivity using 45 self-report items. All items are rated on a likert-type scale ranging from 1 (not true of me) to 5 (very true of me). Negative urgency, the proposed mediator variable for the current study, refers to a tendency to act rashly when experiencing negative affect. “I often make matters worse because I act without thinking when I am upset,” is an example item from the Negative Urgency subscale. Premeditation refers to a tendency to act without thinking, and is measured with items such as “I usually think carefully before doing anything.” Perseverance refers to a tendency to give up, and is measured with items such as: “I finish what I start.” Finally, sensation seeking refers to a tendency to engage in a certain behavior for thrill, and is measured with items such as “I would enjoy fast driving.” In the current sample, the internal consistency for all subscales of the UPPS was adequate (negative urgency $\alpha = .83$, premeditation $\alpha = .88$, perseverance $\alpha = .64$, and sensation seeking $\alpha = .87$).

Behavioral/Interpersonal Emotion Regulation Scale (BIER; Selby, Anestis, Fink, & Joiner, 2009). The BIER is a 29-item assessment of various dysregulated behaviors that may be used to regulate emotion (created by our research group). All behaviors on this scale are considered dysregulated because they are likely harmful to those engaging in them. The BIER states

“Please read the following statements about things you may have done when upset and rate how often you do these things,” and is followed by a list of behaviors. Questions range from intrapersonal behaviors such as “I have taken drugs when upset” and “When upset, I have gorged myself with food,” to interpersonal behaviors such as “When upset, I have vented my feelings to multiple friends over and over” and “When upset, I have insulted other people.” All items are rated on a likert-type scale from 1 (never) to 5 (extremely often). An overall measure of tendency to engage in dysregulated behaviors is created by summing the scores for each item. In this sample the internal consistency of the BIER was good ($\alpha = .87$), providing evidence for internal consistency of the measure. Additionally, the BIER displayed expected correlations with other measures used in this study. It was positively correlated with alexithymia ($r=.345$, $p < .01$), negative urgency ($r=.669$, $p < .01$), and sensation seeking ($r=.168$, $p < .05$). These correlations provide preliminary support for the convergent validity of this measure.

Data Analysis

Our hypotheses were explored with hierarchical multiple regression. We first explored the mediational effects of negative urgency on the relationship between alexithymia and maladaptive behaviors according to the criteria delineated by Baron and Kenny (1986). We then followed these analyses with rival mediation analyses using the other UPPS subscales as potential mediators between alexithymia and maladaptive behaviors. These rival mediation analyses were conducted to demonstrate the specificity of the mediational properties of negative urgency. We further explored any observed mediational relationships with Sobel tests.

Results

Correlation coefficients, means, and standard deviations for all variables are presented in Table 1. According to the guidelines proposed by Baron and Kenny (1986), a significant

mediation effect is present if (a) the independent variable predicts the dependent variable, (b) the independent variable predicts the mediator, (c) the mediator predicts the dependent variable, and (d) the independent variable no longer predicts the dependent variable when the mediator is added as a covariate, or, the association between the independent variable and the dependent variable is significantly attenuated when the mediator is covaried.

In the first step of mediational analysis, we regressed the BIER onto alexithymia (TAS-20). Scores on the TAS-20 significantly predicted scores on the BIER ($\beta=.345$, $t=5.39$, $p<.001$). Next, we regressed negative urgency onto alexithymia. Scores on the TAS-20 significantly predicted scores on negative urgency ($\beta=.451$, $t=7.40$, $p<.001$). We then regressed the BIER onto negative urgency, and found that scores on negative urgency predicted scores on the BIER ($\beta=.669$, $t=13.18$, $p<.001$). For the final step of mediational testing, we added both the source variable (TAS-20) and mediating variable (negative urgency) to the equation, and regressed them simultaneously onto the BIER. After completing this step, the source variable (TAS-20) no longer significantly predicted behavioral outcomes ($\beta=.055$, $t=.963$, $p=.327$), while negative urgency continued to significantly predict behavioral outcomes ($\beta=.644$, $t=11.33$, $p<.001$). Figure 1 displays pathway coefficients for each step described above. For the final step—entering both negative urgency and alexithymia as predictors—the observed effect size was large ($f^2=.60$). According to the guidelines set forth by Cohen (1988), f^2 values of .02, .15, and .35 are considered small, medium, and large respectively.

The above results suggest that negative urgency fully mediates the pathway between alexithymia and maladaptive outcomes. However, to conduct a more stringent test, we utilized the Sobel test of mediation (Sobel, 1982). To run this test, regression coefficients of the pathway

between the independent variable and the mediating variables are determined, as well as regression coefficients of the pathway between the mediating variable and the dependent variable. The Sobel test provided further evidence that negative urgency fully mediates the relationship between alexithymia and maladaptive behavioral outcomes ($z=6.44$, $p<.001$). To determine the directionality of the above relationship, we also tested to see whether alexithymia would mediate the relationship between negative urgency and maladaptive behavioral outcomes. However, results for this test were non-significant, suggesting that negative urgency accounts for the observed relationship between alexithymia and behavioral outcomes, and not the converse (alexithymia mediating the relationship between negative urgency and behavioral outcomes).

Although negative urgency appears to be a robust mediator of the relationship between alexithymia and behavior, previous research (e.g., Whiteside & Lynam, 2001) has demonstrated that negative urgency is only one facet of the larger construct of impulsivity. In order to test whether negative urgency specifically mediated the relationship between alexithymia and behavioral outcomes, we also tested the three remaining facets of impulsivity described by Whiteside and Lynam (2001) as potential mediators. The three other facets of impulsivity that were tested include sensation seeking, lack of premeditation, and lack of perseverance.

Neither sensation seeking nor lack of perseverance mediated the relationship between alexithymia and behavioral outcomes. However, lack of premeditation did partially mediate the relationship between scores on the TAS-20 and scores on the BIER. To test this, we first regressed the BIER onto the TAS-20, which was significant ($\beta=.345$, $t=5.39$, $p<.001$). Next, we regressed lack of premeditation onto alexithymia. This was also significant ($\beta=-.254$, $t=-3.86$, $p<.001$). For the next step, we regressed the BIER onto lack of premeditation ($\beta=.204$,

$t=3.05, p=.003$). Finally, when lack of premeditation and alexithymia were both entered as predictor variables, lack of premeditation was no longer a significant predictor of scores on the BIER ($\beta=.124, t=1.89, p=.06$), though the effect did approach significance. The Sobel test was then conducted to further test for partial mediation. This test was supported ($z=2.40, p<.01$). We also tested the effect size for the last regression, in which we entered both lack of premeditation and alexithymia as predictors of the BIER. The observed effect size was small to medium ($f^2=0.10$) according to Cohen's (1988) guidelines referenced above. Thus, it appears that both negative urgency and lack of premeditation may be involved in dysregulated behaviors, although negative urgency may be the more robust mediator.

Discussion

Consistent with previous research, the results of the present study demonstrated that both alexithymia and negative urgency are correlated with maladaptive behavioral outcomes, such as binge eating. Additionally, our hypothesis that negative urgency would be a mediating mechanism of the observed relationship between alexithymia and maladaptive behaviors was supported, as negative urgency was found to fully mediate the relationship between these two variables. In other words, the results suggest that negative urgency may be the force that drives high-alexithymia individuals to engage in maladaptive behaviors more than individuals who score low on alexithymia. When the sequencing of variables within the mediational chain was reversed, such that alexithymia was examined as a mediator of the relationship between negative urgency and dysregulated behaviors, mediation did not occur, attesting to the specificity of our mediational claim and findings. To further ensure that negative urgency was a unique mediator of the relationship between alexithymia and dysregulated behaviors, we ran rival analyses in which we tested other facets of impulsivity, as defined by Whiteside & Lynam (2001), as potential mediators. Two other facets of impulsivity—lack of perseverance and sensation seeking—did

not mediate the relationship between alexithymia and behavioral outcomes. However, lack of premeditation was found to partially mediate the observed relationship.

Although lack of premeditation was an unexpected mediator, it is not entirely surprising. When individuals take part in maladaptive behaviors (particularly while experiencing negative urgency) they often act without planning the particular behavior they engage in. It seems reasonable to assume that actions characterized as impulsive would also lack a specific plan of execution. In fact, Verdejo-Garcia and colleagues (2007) found that those who were substance dependent had significantly higher scores on lack of premeditation than those who did not abuse substances, although negative urgency remained the strongest predictor of substance dependence. Similarly, in our study, urgency was shown to fully mediate the observed relationship between alexithymia and behavioral outcomes (with a large effect size), while lack of premeditation was only a partial mediator (with a small to medium effect size).

To our knowledge, ours is the first study to directly test potential mechanisms that drive those with alexithymia to engage in destructive behaviors. The relationship between alexithymia and behavioral outcomes was no longer significant after adding negative urgency to our analysis. This indicates that perhaps a sense of negative urgency that is present in those with alexithymia is responsible for destructive behaviors. When faced with negative affect, many individuals are able to recognize and process their emotions adaptively. However, if people are not able to identify or describe their emotions (the very definition of alexithymia), our results suggest that this confusing affective experience may be quite upsetting, and could lead to negative urgency, or a tendency to act rashly when they experience any type of negative affect. This tendency to act rashly is then manifested as the maladaptive behavioral outcomes measured by the BIER.

These novel findings hold importance for understanding reasons why individuals often engage in maladaptive behaviors, especially when such behaviors result in further distress for an individual. Our results suggest that when people have the ability to recognize and understand their emotions (i.e. low-alexithymia) they are much less likely to engage in destructive behaviors as a means to remedy negative affect. Conversely, alexithymic individuals have great difficulty recognizing and describing emotion; yet, they still experience episodes of negative affect. High-alexithymia individuals appear to be highly motivated to alleviate negative affect, regardless of the consequences. It may be that the emotional confusion inherent in alexithymia prompts individuals high on negative urgency to engage in dysregulated behaviors, by acting out either against themselves or others. How then, can this self-defeating and potentially dangerous cycle be interrupted?

First, it may benefit practitioners to routinely administer measures that determine an individual's level of alexithymia. A measure such as the TAS-20, which takes mere minutes to complete, can provide an informative snapshot into one's ability to understand his or her emotions. As many of the current empirically supported treatments (i.e., cognitive behavioral therapy) rely heavily on emotion recognition and processing, it stands to reason that the success of therapy could be impacted by one's ability to complete such tasks. If individuals who score high on alexithymia are immersed in therapies with an emotional component, the result may be frustration or eventual premature termination of therapy. Additionally, as several studies discussed above have highlighted, treatment outcomes (such as months of abstinence) are highly correlated with level of alexithymia, in that individuals who score higher on alexithymia display consistently poorer treatment outcomes, both short- and long-term.

Although not every person scoring high on measures of alexithymia is diagnosed with a mental illness, previous research has indicated that a large variety of psychological diagnoses, ranging from eating disorders to substance use disorders, are represented in those with alexithymia. Although the treatments for these diagnoses may vary, it stands to reason that a component of therapy focusing on coping with negative affect could benefit any individual scoring highly on alexithymia. While several studies suggest that alexithymia is a stable personality trait (e.g., Salminen, Saarijarvi, Aairela, & Tamminen, 1994; Martinez-Sanchez, Ato-Garcia, & Ortiz-Soria, 2003), a therapist's awareness of and attention to a client's high score on alexithymia could potentially enhance treatment. Similarly, awareness of a client's level of negative urgency would be beneficial for therapists.

For example, because alexithymic individuals appear to engage in maladaptive behaviors (via negative urgency) more than those scoring low on alexithymia, a beneficial component of treatment, no matter what the diagnosed psychological disorder, could include adaptive coping skills aimed at those with high levels of negative urgency. In fact, dialectical behavior therapy (DBT), developed by Marsha Linehan (1991), has utilized an idea quite similar to this, and has shown promising results in treating individuals who often display high levels of negative affect that result in dysregulated behaviors. Although the ability to recognize and describe one's emotions may not be a malleable trait, the ability to cope with one's emotions—thereby interrupting the pathway from alexithymia to dysregulated behaviors—likely is, as evidenced by the success of treatments such as DBT.

A few limitations of the present study should be noted. First, although the BIER is a quite comprehensive measure of maladaptive behaviors, it is unclear whether the observed relationships in this study are stronger for some behaviors than others. For example, it may be

that the observed relationships reported in the study are found more in binge eaters rather than those who abuse substances. In the present study, we did not analyze dysregulated behaviors individually; rather, they were analyzed together under the construct of the BIER, which may potentially limit the specificity of our findings. Additionally, as with many research studies conducted at universities, the subject pool was quite homogenous, as it included primarily female, Caucasian, undergraduates. Although this limits the generalizability of our findings somewhat, it is also important to note that many of the dysregulated behaviors examined by the BIER (i.e., binge eating) take place frequently within this population (Katzman, Wolchik, & Braver, 1984). Taking these limitations into account, we are confident that the study described above provides a novel and informative glimpse at important mechanisms influencing the relationship between alexithymia and dysregulated behavior.

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