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# Alexithymia, emotion dysregulation, impulsivity and aggression: A multiple mediation model

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## ABSTRACT

There is a need to better understand the antecedent of aggressive behaviors in order to tailor treatments and reduce the associated damage to the others and the self. Possible mechanisms underlying aggression are poor emotional awareness and emotion dysregulation, as well as impulsivity. Here, we examined the relationships among alexithymia, emotion dysregulation, impulsivity and aggression, comparing a mixed psychiatric sample ( $N=257$ ) and a community sample ( $N=617$ ). The clinical sample reported greater levels of alexithymia, emotion dysregulation, trait impulsivity and aggression, than the community sample. Furthermore, in the community sample, emotion dysregulation and impulsivity mediated the relationship (i.e., accounted for the shared variance) between alexithymia and aggression. In the clinical sample, only emotion dysregulation explained the alexithymia-aggression link. In particular, specific dimensions of the emotion dysregulation (i.e., Negative Urgency) and impulsivity constructs (i.e., cognitive and motor impulsivity) played a unique role in explaining these associations. Finally, controlling for depressive symptoms reduced some of the findings involving impulsivity to nonsignificant results. Overall, our findings add to the extant literature attesting to the relevance of alexithymia and emotion dysregulation for understanding aggression, and providing concrete recommendation for the treatment and prevention of aggressive tendencies.

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## 1. Introduction

Human aggression, rather than being inherently pathological, represents a natural predisposition that is vital for survival, and can be adaptively used in the everyday life as a form of genuine protest against adversities in life (Bushman and Anderson, 2001; Fonagy, 2003). However, when there is a failure in some of the processes that normally tame and canalize aggressive tendencies, this can pave the way for the occurrence of destructive behavior (Fonagy, 2003). Such behavior can vary in intensity and severity, spanning from chronic anger expression or frequent angry outburst, to sexual or otherwise interpersonal violent acts. Therefore, understanding the psychological antecedents of aggressive

behavior is a crucial step to increase the possibility to prevent re-offending, at least in some sub-populations. Mechanisms that are likely to predate maladaptive form of aggression include poor awareness of emotions and a diminished ability to think and talk about feelings, that is, alexithymia (Loas et al., 2015; Nemiah and Sifneos, 1970; Taylor et al., 1997), emotion dysregulation, and impulsivity. Individuals who are unaware of their feelings have more difficulties toning down emotional arousal, especially when they are under stress. When people perceive a possible danger in their relational environment, they can feel a tension, and if they are not able to recognize the source and the nature of this sensation, they may consequently remain deprived of adaptive strategies to solve possible interpersonal conflicts (e.g., adopting appropriate communication and negotiation skills). For example, being aware that one is feeling humiliated by comments from other people, can help him to explain them that he was offended by their comments and, for example invite them to plea excuse or to abstain in the future from making similar comments. In absence of a proper awareness of feeling humiliated, such a communication could not

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happen. In that case, humiliation will just be felt as a “tension”, “pain”, or at best will be perceived as another emotion (e.g., anger), increasing the possibilities that attack will be considered as one of the few strategies available to protect oneself from the source of such pain (Elison et al., 2014).

As for the case of some hypotheses about the mechanisms underlying self-harm (Linhean, 1993), it is possible that poor emotional awareness hampers emotion regulation, and in turn emotion dysregulation may represent one of the proximal antecedents of aggression (Jenkins et al., 2014). There is more, though, to emotion dysregulation, than alexithymia. One of the most widely adopted conceptualizations describes emotion dysregulation as involving: lack of awareness for and understanding of emotions, nonacceptance of emotional responses, difficulties engaging in goal-directed behavior when upset, inability to refrain from impulsive reactions when experiencing negative emotions, and limited access to effective emotion regulation strategies (Gratz and Roemer, 2004). Recent research has shown that difficulties in these domains can increase the individual proneness to react with aggression to perceived threats or offenses (Garofalo et al., 2016). Indeed, even among people who are fully aware of their emotions, there is a certain variability in how they deal with and regulate them (e.g., reappraising the situation, or thinking about different kind of problem solving strategies). Therefore, dysregulation of emotions, and in particular of anger, is considered a possible mechanism underlying aggression (Scott et al., 2014; Wahlstrom et al., 2015).

Another possible antecedent of aggression is impulsivity (Bousardt et al., 2015). As described below, when an individual appraises a certain situation as a possible source of menace and pain, he or she can become negatively aroused. In such a situation, an individual with high levels of trait impulsivity might lack the cognitive resources necessary to inhibit aggressive reaction or refrain from acting out the fantasies of self-protective aggression or vendetta that he or she is experiencing. Therefore, once feeling to have a right to retaliate, action can rapidly follow.

To date, studies linking alexithymia, emotion dysregulation and impulsivity with aggression have produced mixed results. Emotion dysregulation has been found to predict aggression in offenders (Garofalo et al., 2016; Robertson et al., 2014), as well as in patients with borderline personality disorder (Scott et al., 2014). Further, in a community sample of women, emotion dysregulation mediated the relationship between trauma and both impulsive and premeditated aggression (Miles et al., 2015). Of note, some authors (e.g., Scott et al., 2014) considered impulsivity as an aspect of emotion dysregulation, although the two constructs do not completely overlap. Indeed, emotion dysregulation (as described above) refers to a wider set of difficulties that are not necessarily linked to impulsivity. On the other hand, impulsivity includes components, such as cognitive impulsivity and lack of planning, which are not necessarily related to emotion dysregulation. Moreover, within the emotion dysregulation construct (Gratz and Roemer, 2004), it is often included the state-like action-component of impulsivity, that is, an inability to inhibit impulsive behavior when emotionally aroused (also referred to as negative urgency). On the other hand, trait impulsivity represents a more general propensity toward rash actions and decisions, or unplanned reactions to internal or external stimuli with a lack of regard for the possible consequences of these actions (Moeller et al., 2001). Prior studies have reported that these two aspects of the impulsivity domain only partially overlap, and present differential associations with personality traits (Velotti and Garofalo, 2015).

As regards a direct impact of alexithymia, prior studies found that high levels of alexithymia in a sample of juvenile sexual offenders (Moriarty et al., 2001) and in violent offenders

(Keltikangas-Jarvinen, 1982). In another investigation, alexithymia predicted impulsive aggression in a sample of veterans (Teten et al., 2008). As regards a poor ability to recognize and express feelings, both emotional avoidance (which can be considered a correlate of alexithymia), and emotional inexpressivity were uniquely related to self-reported aggression in a sample of adults with Post Traumatic Stress Disorder (PTSD; Tull et al., 2007). Furthermore, in a community sample of adolescents, alexithymia mediated the association between attachment insecurities and impulsive aggressiveness (Fossati et al., 2009).

In this study, we sought to confirm and extend prior research examining the mechanisms linking alexithymia, emotion dysregulation, impulsivity, and aggression in a clinical sample as well as in a community sample. First, we hypothesized that the clinical sample reported higher levels of alexithymia, emotion dysregulation, impulsivity, and aggression. Second, we expected to confirm the positive associations among alexithymia, emotion dysregulation, impulsivity, and aggression, in both samples. Finally, we hypothesized that the association between alexithymia and aggression was mediated by emotion dysregulation and impulsivity, in both samples.

We emphasize that although we use the terms ‘prediction’ and ‘mediation’ as they are commonly used also in cross-sectional studies (e.g., Hayes, 2000; Preacher and Hayes, 2008), we do not use them to imply causal or temporal relationships among the study variables (as it would not be possible in any correlational design). Rather, we refer to these terms as statistical mediation and predictions. As such, a significant predictor is an independent variable that in a multiple regression analyses is significantly associated with the dependent variable, showing a unique and independent contribution (i.e., controlling for the shared variance among predictors) to the model. Likewise, we carried out mediation analyses to examine whether the shared variance between an independent (here, alexithymia) and a dependent variables (here, aggression) was accounted for by a third intervening variable (i.e., the mediators; here, emotion dysregulation and impulsivity), at least partially. That is, we wanted to test whether the association between alexithymia and aggression was partly explained by emotion dysregulation and impulsivity. Including both mediators in the same model allowed us to statistically remove also the shared variance between the mediators, as well as the variance that the mediators shared with the independent variable (i.e., alexithymia). In doing so, we investigated the unique and independent contribution of each mediator to the model, testing whether they could explain a portion of the variance shared by alexithymia and aggression. Therefore, the term mediators define here those variables that are expected to account for the association between an independent and a dependent variables, without by any means implying that causal relationships among these variables can be drawn.

## 2. Method

### 2.1. Participants and procedure

A large community sample was enrolled by means of a snowball technique and comprised 617 participants ( $M_{age}=36.88$ ,  $SD=13.11$ ; 54.2% males). The snowball sampling method allowed us to obtain a wide sample of adults of different ages, status and education strata. Indeed, each research assistants involved in data collection started with a known group of people, asking them to recruit further participants among their acquaintances. As such, each contact leads to another, in turn expanding the pool of potential participants (Sadler et al., 2010). Males ( $M_{age}=37.93$ ,  $SD=12.20$ ) were significantly, albeit slightly, older than females

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