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## Addictive Behaviors

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# The interplay between trauma, substance abuse and appetitive aggression and its relation to criminal activity among high-risk males in South Africa



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#### HIGHLIGHTS

- Traumatic experiences positively related to posttraumatic stress and drug abuse
- · Violence exposure affiliated with more aggressive tendencies and cruel behavior
- · Drug abuse prior to violence commission linked to higher attraction to cruelty
- Substance intake before crime perpetration associated with more committed offenses
- Reducing substance abuse may lower high violence levels among young South Africans.

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#### ABSTRACT

Background: In persistently unsafe environments, the cumulative exposure to violence predicts not only the development of posttraumatic stress disorder (PTSD), but also of increased aggression and violent outbursts. Substance use disorders interact with these developments, as drug consumption may blunt symptoms and also reduce the threshold for violent acts. Investigating the interplay between these variables and the possible cumulative effect of drug abuse on the attraction to cruelty is a crucial step in understanding the cycle of violence and developing intervention programs that address this cycle in violence-troubled communities such as low-income urban areas in South Africa.

Methods: Young males at risk (N=290) were recruited through a reintegration center for offenders in Cape Town. We assessed types of traumatic events experienced, PTSD symptom severity, appetitive aggression, committed offenses and patterns of drug abuse prior to the perpetration of violence.

*Results:* Path-analyses confirmed a positive relationship between exposure to traumatic events and PTSD symptom severity, appetitive aggression, the number of committed offenses and drug abuse prior to violence. PTSD symptoms were positively associated with the propensity toward aggression. Furthermore, more severe drug abuse was related to higher attraction to violence and more committed offenses.

*Conclusions:* We conclude that like exposure to violence, drug abuse may play a key role in the attraction to aggression and criminal acts. Measures of violence prevention and psychotherapeutic interventions for traumarelated suffering may not be effective without enduring drug abuse rehabilitation.

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#### 1. Introduction

Male adolescents and young adults living in low-income urban areas of South Africa are exposed to extreme levels of violence and crime. In the Cape Town metropolitan municipality, rates of severe crime are among the highest in the world (Groenewald et al., 2003). Due to the extreme levels of exposure to traumatic stressors (Lockhat & Niekerk, 2000) and involvement in gang violence (Maxson, Whitlock, & Klein, 1998), the boundary between victimization and criminalization in these environments is often blurred. Additionally, South Africa reports one of the highest levels of per-capita alcohol consumption worldwide for individuals drinking alcohol (Rehm et al., 2003); alcohol is the drug most commonly abused by adolescents in the country, followed by illicit drugs such as cannabis, methamphetamine ("tik") and methaqualone ("mandrax") (Parry, Myers, et al., 2004; Ramlagan, Peltzer, & Matseke, 2010). The present study investigates the role of drug abuse, i.e. the excessive, socially problematic consumption of intoxicating substances (Doweiko, 2015), in the relationship between victimization and the perpetration of aggressive behavior in a sample of at-risk young males from low-income areas in Cape Town.

Previous research indicates a clear relationship between drug abuse and heightened aggressive behavior. Both alcohol and illegal drugs have been associated with murder, intimate partner violence and child abuse (e.g. Plüddemann, Flisher, McKetin, Parry, & Lombard, 2010; Roizen, 1997; Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009). This correlation holds true for South Africa: Between 1999 and 2000, in Cape Town, Johannesburg and Durban, almost 50% of individuals arrested on charges related to family violence, homicide or rape were reported to have been either drunk or under the influence of drugs at the time of the offense (Parry, Plüddemann, et al., 2004). The severity of the committed crimes is positively associated with alcohol or drug consumption preceding the violent act (Chermack & Blow, 2002; Hecker & Haer, 2015; White, Tice, Loeber, & Stouthamer-Loeber, 2002). Although these data reveal that substance abuse represents a frequent precursor to aggressive behavior (Taylor & Chermack, 1993), the question of whether drug abuse functions as a catalyst (Ching, Daffern, & Thomas, 2012) or in a causal role, remains a controversial issue (Klostermann & Fals-Stewart, 2006).

Posttraumatic stress in relation to victimization has been indicated as another important risk factor in the perpetration of violence in low-income urban areas in South Africa (Sommer et al., in press). Symptoms such as hyperarousal, hostility and anger may be viewed as a behavioral pattern to (presumably ongoing) danger, which may lead to aggression (Hellmuth, Stappenbeck, Hoerster, & Jakupcak, 2012). Frequently, trauma survivors attempt to numb these traumatic stress symptoms through self-medication (Bremner, Southwick, Darnell, & Charney, 1996): Alcohol problems and drug abuse often co-occur with PTSD (e.g. Mathews, Abrahams, Jewkes, Martin, & Lombard, 2009; Stewart, 1996). The comorbidity between drug dependence and PTSD exacerbates aggressive tendencies and is associated with higher levels of perpetrated violence than either drug dependence or PTSD alone (Parrot, Drobes, Saladin, Coffey, & Dansky, 2003).

Aggressive behavior can be driven by the desire to defend oneself against a threat or to take revenge against those responsible for a trauma. This type of reactive aggression is often reported by individuals suffering from PTSD (Bayer, Klasen, & Adam, 2007). Additionally, aggressive behavior can be intrinsically rewarding: Offenders may simply get a thrill from being violent. We refer to this drive as *appetitive aggression* (Elbert, Weierstall & Schauer, 2010), a motivation that has been observed among youth offenders in low-income areas of Cape Town: Weierstall, Hinsberger et al. (2013) showed that participants with more traits of appetitive aggression presented with less impaired psychosocial functioning, implying that the attraction to aggressive behavior may reflect a process of adaptation to living in high-violence neighborhoods.

The role of alcohol and drugs in promoting appetitive aggression has yet to be investigated in a systematic manner: A recent study by Hecker and Haer (2015) examines the impact of prior drug abuse on emotional states during the perpetration of violence in combatants from the Democratic Republic of the Congo. Most combatants felt *fearless*, more *powerful*, and more *aggressive* after drug abuse and had a higher propensity to behave in an appetitively aggressive manner. Appetitive aggression may thus be fueled by drug abuse due to the (at times positive) qualities linked to substance abuse, such as increased arousal, lower social inhibitions and stronger feelings of companionship when in a group (Ching et al., 2012). Furthermore, as fear is reduced (Tyner & Fremouw, 2008), the urge to engage in aggression for the purposes of revenge and satisfaction may be unleashed.

Various factors – such as exposure to traumatic events and posttraumatic stress, appetitive aggression and substance abuse – have been hypothesized to contribute to the extremely high levels of violence in South Africa. Using path analyses, we have attempted to clarify the relationship between these factors in order to provide guidance for psychological programs for young offenders living in communities with high levels of violence and crime. In line with previous research, we investigated 1) whether exposure to violence is positively related to appetitive aggression, PTSD symptoms, substance abuse and the number of committed offenses; 2) whether posttraumatic stress has a positive correlation to drug abuse and the propensity toward aggressive behavior; 3) whether drug abuse is positively correlated to aggressive tendencies and the number of committed offenses; and 4) whether appetitive aggression is positively related to the number of violent offenses as the main outcome variable.

#### 2. Materials and methods

#### 2.1. Participants

In 2013–2014, structured clinical interviews were conducted with 290 males in the ages of 14–40 years (M=21.96, SD=4.53). All respondents were Black Africans of Xhosa ethnicity from low-income areas in Cape Town and were contacted through REALISTIC, a community-based organization that seeks to rehabilitate young offenders. Recruitment focused on former offenders currently attending a reintegration program (20%), and those who had previously completed such programs as well as individuals at risk for perpetrating or becoming victims of crime (80%). The educational level was rather low, with 81% of the participants failing to meet secondary-school graduation requirements.

The ethical review boards of the University of Konstanz, Stellenbosch University and the University of Cape Town approved the study, and all participants gave their informed consent. For those under the age of 18, parents or caretakers gave informed consent. For their participation in the interview, participants received financial compensation.

#### 2.2. Procedure

In order to ensure confidentiality and privacy, data were collected at the organization's premises in Cape Town or at private offices nearby. The diagnostic interviews were conducted by a group of four German mental-health experts and three local counselors who had received 25 h of training in the theoretical concepts of mental disorders, trauma, aggression and clinical diagnosis through the use of structured interviews. Furthermore, to ensure the valid assessment of trauma symptoms and appetitive aggression, concepts and translations were discussed in detail with the interpreters before their application in the interviews. Bilingual native (Xhosa-speaking) interpreters who were specifically trained in translation in clinical settings assisted with administration and translated the questionnaires into isiXhosa and back to English. In cases in which participants reported suicidal thoughts or

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