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Self- and other-directed forms of violence and their relationship with lifetime *DSM-5* psychiatric disorders: Results from the National Epidemiologic Survey on Alcohol Related Conditions – III (NESARC – III)

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ABSTRACT

A combined history of violence toward self and others has been reported in clinical and incarcerated populations. Psychiatric disorders have been implicated as risk factors. This study examines the lifetime prevalence of this combined violence in the general population and its associations with *DSM-5* psychiatric disorders in comparison with other- and self-directed violence. Data from the National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC–III) were analyzed, including 36,309 U.S. adults ages 18 and older. Violent behavior was defined by suicide attempts; recurrent suicidal behavior; gestures, threats, or self-mutilating behavior (self-directed); and multiple items of violence toward others (other-directed) in four categories: none, self-directed only, other-directed only, and combined self-/other-directed. Multinomial logistic regression examined these violence categories in association with sociodemographics and lifetime *DSM-5* psychiatric disorders. Results show that approximately 18.1% of adults reported violent behavior, including self-directed only (4.4%), other-directed only (10.9%), and combined self- and other-directed violence (2.8%). *DSM-5* psychiatric disorders significantly associated with the violence typology include alcohol, tobacco, cannabis, and other drug use disorders; mood disorders; posttraumatic stress disorder; and schizotypal, antisocial, and borderline personality disorders. Findings extend the clinical literature regarding the co-occurrence of self- and other-directed violent behaviors to the general population.

1. Introduction

Correlates of both suicidal behavior and interpersonal violence in clinical populations have been a focus of psychiatric studies for many years (Plutchik et al., 1989; Apter et al., 1993; Links et al., 2003). In addition to an earlier review of 27 clinical studies (Hillbrand, 2001), a more recent systematic review of clinical and community studies supported the co-occurrence of aggression against self and aggression against others (O'Donnell et al., 2015). Not only have studies of incarcerated violent offenders revealed high frequency of suicide attempts (Hillbrand, 1995; Kimonis et al., 2010; Webb et al., 2012; Cook, 2013), but a large population cohort study, based on a Swedish population registry, has also indicated a significant association between a record of intentional self-harm (i.e., ingestion of harmful substances or cutting/burning oneself) and conviction of a violent crime (Sahlin et al., 2017). Moreover, a prospective study has shown that suicidality and violence toward others mutually affect each other during adolescence and young adulthood (Van Dulmen et al., 2013). In a review of independent literatures of risk factors for violence toward others and suicidality, Plutchik (1995) noted that a number of risk factors (e.g., substance abuse, history of psychiatric hospitalization, poor impulse control) were common to both forms of violence. Among them, psychiatric disorders have been associated with increased risk of violence toward others (Swanson et al., 1990; Arseneault et al., 2000; Pulay et al., 2008) and suicidality (Harris and Barraclough, 1997; Jokinen et al., 2010).

Even though murder-suicide is extremely rare (< 0.001%) (Eliason, 2009), the co-occurrence of suicidal behavior and violence toward others is likely to be more prevalent in the general population, according to the few available studies. Studies of adolescents in the

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general population have established associations between suicide attempts and physical fighting, and the joint prevalence of these behaviors was reported to be 2.9% (Harford et al., 2012), 3.6% (Swahn et al., 2013), or merely 0.8% (Harford et al., 2016) when violence toward others is defined as intent to seriously inflict harm. In a national study of high school students, suicidality and fighting were used to form a violence typology of self-directed, other-directed, and both self- and other-directed violence, and no violence (Harford et al., 2012). When compared with students in the other-directed and self-directed violence categories, those in the combined violence group were more likely to be younger, depressed, and engaged in substance abuse (Harford et al., 2012). Using a similar typology, Swahn et al. (2013) found significant associations between combined violence and early drinking onset, heavy drinking, and feelings of sadness. Harford et al. (2016) also found heavy episodic drinking to be more prevalent among youth in the combined violence category relative to other-directed and self-directed violence categories. Combined violence showed even stronger associations with meeting 2 or more *DSM-IV* AUD symptom criteria.

By contrast, combined violence against self and others among adults is less explored in the research literature. Using data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), Harford et al. (2013) derived a violence typology for adults based on a latent class analysis of 5 other-directed and 4 self-directed indicators of violent behavior. The analysis identified 4 broad categories of violence: other-directed violence, self-directed violence, combined violence, and no or minimal violence. The identification of a small category of combined violence raises a question as to whether there are associations between self- and other-directed violent behaviors in adults. The group with combined self- and other-directed violence, compared with these two forms of violence alone, was more strongly associated with substance use disorders (88.2% for combined vs. 81.1% for other-directed and 60.3% for self-directed), mood disorders (63.3% for combined vs. 18.3% for other-directed and 40.6% for self-directed), and personality disorders (76.2% for combined vs. 42.1% for other-directed and 46.5% for self-directed). Nevertheless, the extent to which the combined form of violence is a meaningful and reliable phenomenon requires replication in other independent adult samples, with different measures of self- and other-directed violence.

To this end, the current study seeks to use data from the NESARC–III to assess the associations between *DSM-5* disorders (American Psychiatric Association, 2013) and the prevalence of violence toward others and self among American adults. Unlike the measures in Harford et al. (2013), the self-directed violence is not measured by suicide attempts and suicidal ideation, but rather by suicide attempts, recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior. The other-directed violence is not limited to the 5 items of interpersonal aggression, but rather is supplemented by 2 additional items: forcing someone to have sex, and robbing or mugging someone (Pulay et al., 2008). Based on the current literature, it is hypothesized that *DSM-5* disorders will yield significantly stronger associations for combined violence relative to self- or other-directed violence.

2. Methods

2.1. Study design

Data for this study were obtained from the National Epidemiologic Survey on Alcohol and Related Conditions–III (NESARC–III), a nationally representative survey of the noninstitutionalized U.S. civilian population ages 18 or older in 2012–2013, including persons in households and group quarters (e.g., group homes, worker dormitories) (Grant et al., 2014). Among other areas, the NESARC–III collected detailed information on demographics, substance use, and mental health. The NESARC–III was sponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA); the fieldwork was conducted by Westat (Rockville, MD). Participants within households and segments (i.e., groups of census-defined blocks) were randomly selected according to a multistage probability sample design, in which primary sampling units were individual or combined counties from 50 states and the District of Columbia. High- and moderate-minority segments were oversampled relative to the low-minority segments by a ratio of 2.0 and 1.5, respectively. A total of 36,309 respondents completed the face-to-face Alcohol Use Disorder and Associated Disabilities Interview Schedule, *DSM-5* Version (AUDADIS-5) interview—a fully structured, computer-assisted diagnostic interview designed for trained lay interviewers (Grant et al., 2011). The response rate of NESARC–III was 60.1%, comparable to most current U.S. national health surveys (Centers for Disease Control and Prevention, 2014; Substance Abuse and Mental Health Services Administration, 2014).

2.2. Measures

2.2.1. Self- and other-directed violence

Self-directed violence in this study was measured not only by suicide attempts but also by recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior. In two separate sections of NESARC–III on mood disorders for both depression (low mood) and mania (high mood), respondents were asked about suicidality experiences during the time in their life when they were not their normal selves and their mood was at its lowest and they enjoyed or cared the least about things, as well as during the time when they or others noticed that they were excited or elated/irritable or easily annoyed and also extremely revved up or energetic. Respondents with suicidality experiences in the context of manic or hypomanic episodes were asked for the bipolar disorder specifiers with reference to mixed (depressive) features during episodes of excited or elated/irritable mood. Specifically, the suicidality experiences were about whether they attempted suicide or tried to kill themselves, whether they thought about committing suicide or killing themselves, and whether they thought about their own death nearly every day for at least 2 weeks. The latter questions pertaining to suicidal ideation were not considered in the present study. A positive response to the first question or to a standalone question from the medical conditions section that asked respondents whether they ever attempted suicide denotes ever having had a suicide attempt. A total of 30% of respondent-reported suicide attempts were not associated with mood episodes. The experience of recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior was measured in one of the diagnostic criteria of borderline personality disorders by two questions about whether the respondents cut, burned, or scratched themselves on purpose when under a lot of stress and whether the respondents tried to hurt or kill themselves, or threatened to do so. Other-directed violence was based on a threshold of at least one of the following 7 violent behaviors since age 15: (1) ever steal something from someone directly, like mugging them, threatening them with a weapon, or taking their purse or wallet; (2) ever force anyone to engage in any sexual activity with you against their will; (3) ever get into a lot of fights that you started; (4) ever physically hurt another person in any way on purpose; (5) ever get into a fight that came to swapping blows with someone like a husband, wife, boyfriend, or girlfriend; (6) ever use a weapon like a stick, knife, or gun in a fight; and (7) ever hit someone so hard that you injured them or they had to see a doctor (Cronbach's alpha = 0.96).

A violence typology was constructed from a cross-tabulation of other-directed violence and self-directed violence, with the following four violence categories: none, self-directed only, other-directed only, and combined self-/other-directed.

2.2.2. Selected psychiatric disorders

The following *DSM-5* lifetime diagnoses of psychiatric disorders, as assessed by AUDADIS-5, were included in the present study: substance use disorders (alcohol, tobacco, cannabis, opioid/heroin, and any other drug use disorders, including sedative, cocaine, stimulant,