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Exposure to the Lebanon War of 2006 and effects on alcohol use disorders: The moderating role of childhood maltreatment☆

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ABSTRACT

Background: Civilian populations now comprise the majority of casualties in modern warfare, but effects of war exposure on alcohol disorders in the general population are largely unexplored. Accumulating literature indicates that adverse experiences early in life sensitize individuals to increased alcohol problems after adult stressful experiences. However, child and adult stressful experiences can be correlated, limiting interpretation. We examine risk for alcohol disorders among Israelis after the 2006 Lebanon War, a fateful event outside the control of civilian individuals and uncorrelated with childhood experiences. Further, we test whether those with a history of maltreatment are at greater risk for an alcohol use disorder after war exposure compared to those without such a history.
Methods: Adult household residents selected from the Israeli population register were assessed with a psychiatric structured interview; the analyzed sample included 1306 respondents. War measures included self-reported days in an exposed region.
Results: Among those with a history of maltreatment, those in a war-exposed region for 30+ days had 5.3 times the odds of subsequent alcohol disorders compared to those exposed 0 days (95%C.I. 1.01–27.76), controlled for relevant confounders; the odds ratio for those without this history was 0.5 (95%C.I. 0.25–1.01); test for interaction: $X^2 = 5.28$, df = 1, $P = 0.02$.
Conclusions: Experiencing a fateful stressor outside the control of study participants, civilian exposure to the 2006 Lebanon War, is associated with a heightened the risk of alcohol disorders among those with early adverse childhood experiences. Results suggest that early life experiences may sensitize individuals to adverse health responses later in life.

1. Introduction

Exposure to war is a stress that has profound effects on the mental health of populations, both civilian (Johnson and Thompson, 2008) and military (Dohrenwend et al., 2006; Wessley, 2007). A well-documented literature has shown that wartime experiences increase the risk of psychopathology (Dohrenwend et al., 2006; Erickson et al., 2001; Johnson and Thompson, 2008; Kessler et al., 1995; Morina and Emmelkamp, 2012; Skodol et al., 1996). While exposure to combat stress is associated with the development and persistence of alcohol disorders among soldiers (Scherrer et al., 2008; Stewart, 1996), civilian populations now comprise the majority of casualties in modern warfare (Aboutanos and Baker, 1997; International Federation of Red Cross and Red Crescent Societies, 1993). A more comprehensive understanding of civilian mental health and substance use responses to war exposure is important for public health in response to war.

☆ Supplementary material can be found by accessing the online version of this paper. See Appendix A for more details.

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Much of the evidence linking war exposure to alcohol disorders is based on military samples. Military samples are predominantly composed of young men (Turner et al., 2007), the population group at highest risk for alcohol disorders (Hasin et al., 2007), raising concerns about generalizability to civilian populations who may also experience widespread exposure to traumatic events during wartime. Hypotheses about the effects of war on civilian populations can potentially be drawn from the literature on terrorism and natural disorders, as these exposures may be analogous in some ways to civilian exposure to the stresses of war. These experiences are largely outside of individual control, are often acute, often render fear and helplessness, and may involve witnessing death and other atrocities. Studies of terrorism and natural disasters in general population samples have found short-term increases in mean population alcohol consumption (DiMaggio et al., 2009; Keyes et al., 2011), but have rarely found increases in alcohol disorders (North et al., 2004, 2010, 2002). Small studies of civilian samples find that exposure to war and terrorism are associated with psychological distress (Dickstein et al., 2012; Hobfoll et al., 2012), but wartime experiences as risk factors for alcohol use disorders in civilian populations remain largely unexplored.

The consequences of war and other traumatic experiences must be considered in the context of factors that may predispose individuals to potentially problematic psychological or behavioral response. A growing body of evidence has shown that events in early childhood are particularly salient predisposing factors for the development of psychopathology after trauma exposure, suggesting that studies of adult traumatic events should take into account potential adverse childhood environments in order to better understand response. Studies find that individuals with childhood trauma exposure, particularly abuse, neglect, or chaotic home environments, are at heightened risk for psychopathology (Bal et al., 2003; Futa et al., 2003; McLaughlin and Hatzenbuehler, 2009; McLaughlin et al., 2009, 2010; Wichers et al., 2009) and heavy alcohol consumption (Keyes et al., 2012b; Young-Wolff et al., 2012) after exposure to stress in adulthood in both civilian and military samples. Childhood maltreatment is associated with increased emotional reactivity (Glaser et al., 2006; McLaughlin et al., 2010; Wichers et al., 2009), disruptions in the ability to adaptively modulate negative emotions (McLaughlin and Hatzenbuehler, 2009; McLaughlin et al., 2009) and problematic coping strategies (Bal et al., 2003; Futa et al., 2003). Individuals who are emotionally reactive and who have limited skills for effectively modulating their emotions following childhood maltreatment may use alcohol or other substances to manage negative affect and arousal following stressful experiences (Carpenter and Hasin, 1998; Cooper et al., 1995; Ham and Hope, 2003). Thus, individuals who experience adversities in childhood may be more sensitized to adverse reactions following stressors occurring in adulthood.

Understanding factors that predict how individuals respond to stressors in adulthood is of substantial public health as well as clinical importance. While child maltreatment is known to be associated with adverse mental health and substance use consequences in adulthood (Keyes et al., 2012a, 2011), there is substantial individual variation among adults with maltreatment histories. Identification of factors that predict adverse outcomes among those affected by maltreatment, such as adult stressful life events, can elucidate the stress process more specifically and illuminate avenues for public health intervention. For example, if child and adult stressors interact to produce problematic alcohol use, clinicians treating individuals exposed to war should consider how stressful experiences over the life course may shape war-related responses, and identify individuals with past history of early-life stressors as particularly vulnerable to subsequent psychopathology.

Assessing the potential interaction of childhood and adulthood stressful experiences in predicting alcohol problems is complicated by the correlation of many of these experiences. Individuals who experience childhood stressors are more likely to experience certain stressful events as adults, such as intimate partner violence (Desai et al., 2002; Ehrensaft et al., 2003; McKinney et al., 2009), neighborhood disorganization (Freisthler, 2004), divorce and other interpersonal stressful experiences (Andrews, 1981; Fergusson and Horwood, 1984; Wolfinger, 2005). The interaction between childhood adversity and these adult stressors in producing adverse responses may be obscured by correlations between exposures occurring at different points in development. Thus, childhood stressors could confound the relation between adult stressors and adverse mental health, in addition to interacting with adult stressors. Only through assessment of adult and/or child stressors that are relatively randomly distributed, thus uncorrelated, can a rigorous assessment of interaction be demonstrated. Consistent with this, studies of the risk for depression and alcohol-related outcomes suggest that the interaction of childhood maltreatment and adult stressors is present (Young-Wolff et al., 2012) or stronger (Harkness et al., 2006) when the adult stressors are outside the individual's control and thus uncorrelated with the childhood stressor. Wartime attacks on civilian populations are another example of one such adult stressor that is largely outside the control of individual civilians, and thus not a consequence of their childhood stressors.

In sum, the present study utilizes a war-time stressor in Israel outside of the control of civilians to rigorously assess the evidence for an interaction between adverse childhood experiences and adult exposure to a stressful event in association with alcohol use disorders. This study examines whether a large household sample of Israelis were at increased risk for alcohol use disorders following their exposure to the Lebanon War of 2006 (Second Lebanon War). The war occurred between the 13th of July and the 14th of August 2006, a period of 33 days (Rubin, 2007), with about 3790 rockets fired into Northern Israel from Lebanon. The Israeli civilian death toll was estimated at 44, with approximately 1500 civilians wounded. We examine how exposure to the war affected risk for subsequent alcohol use disorders, and whether the association between war exposure and alcohol disorders was modified by experiences of childhood maltreatment.

2. Materials and methods

2.1. Study procedures

Participants came from a study of genetic and environmental influences on alcohol use that was planned prior to the Second Lebanon War. A population-based sample of adult residents of Jewish ethnicity was selected for the sample from the Israeli Population Register by the Israeli Bureau of the Census. The Israeli Population Register covers household residents in all areas of Israel; potential participants were selected directly from the registry based on their area of residence, age, gender, ethnicity and Former Soviet Union (FSU) immigrant status. Individuals between the age of 21 and 70 were included; those aged between 18 and 21 typically serve in the army and are thus difficult to contact, and those older than 70 would be too unlikely to have substantial levels of alcohol consumptions to achieve main study aims. Males were oversampled as drinking among Israeli women is limited (Shmulewitz et al., 2010). Only those of Jewish ethnicity were included to provide sample homogeneity to address original study genetic questions, while immigrants from the FSU were over-selected to provide a sufficient sample size for to address one of the original study environmental research questions. Interviewers obtained written informed consent as approved by relevant Institutional Review Boards (Shmulewitz et al., 2010, 2011), and administered computer-assisted interviews. Interviewers underwent structured training and supervisor certification. Ongoing supervision included field observation, review of recorded interviews, and telephone verification of participation and responses. Among eligible participants, 1349 were included, for a response rate of 68.9%. Further detail on study design and methodology is found elsewhere (Hasin et al., 2002; Shmulewitz et al., 2010, 2011).

2.2. Sample

Respondents interviewed after August, 2007 ($n = 1306$) were included in this analysis to ensure temporal order between war exposure and alcohol disorder symptoms. Of these, 76.5% ($N = 999$) were male; 24.4% ($N = 318$) were 18–29 years old,