



Risk factors for alcoholism in the Oklahoma Family Health Patterns project: Impact of early life adversity and family history on affect regulation and personality

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ABSTRACT

Aim: This study examined the impact of early lifetime adversity (ELA) on affect regulation and personality in persons with family history (FH+) and without (FH−) a family history of alcoholism. We examined the impact of early life adversity in healthy young adults, 18–30 years of age enrolled in a long-term study on risk for alcohol and other substance abuse.

Methods: ELA was assessed by a composite score of low socioeconomic status and personal experience of physical or sexual abuse and/or separation from parents before age 16, resulting in a score of 0, 1–2, or >3 adverse events. Unstable affect regulation and personality variables were obtained via self-report measures.

Results: Higher ELA scores were seen in FH+ ($\chi^2 = 109.2, p < 0.0001$) and in women ($\chi^2 = 17.82, p = 0.0019$). Although higher ELA predicted less emotional stability and more behavioral undercontrol, further analysis including both FH and ELA showed that FH+ persons are prone to poor affect regulation, negative moods, and have risky drinking and drug abuse tendencies independent of ELA level. ELA predicts reduced stress reactivity and poorer cognitive control over impulsive behaviors as shown elsewhere.

Conclusions: The present work shows that FH+ have poor mood regulation and antisocial characteristics. The greater prevalence of ELA in FH+ persons indicates that life experience and FH+ work in tandem to result in risky patterns of alcohol and drug experimentation to elevate risk for alcoholism. Further studies of genetic and environmental contributions to alcoholism are called for.

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1. Introduction

The Oklahoma Family Health Patterns project (OFHP) is dedicated to understanding risk factors for alcoholism by comparing young adults with a family history (FH+) to those with no history (FH−) of the disorder. The premise of the project is that addictions, by definition, represent a failure of brain systems that control motivated behavior, and that increasingly severe loss of behavioral regulation underlies increased severity of addiction (American

Psychiatric Association, 1994). This rationale presupposes that even healthy FH+ persons may display poorer regulation of motivated behavior, relative to FH−. Motivation and emotion are regulated by interactions between the brain's prefrontal cortex and limbic system (Damasio, 1994). To operationalize this conceptual model we initially predicted that FH+ persons would show alterations in stress reactivity, affect, cognition, and overt behavior, all of which depend on prefrontal–limbic interactions.

We have recently focused on early life adversity (ELA) as a potential contributor to personal characteristics that may increase risk for alcohol and other substance use disorders and have a differential impact in FH+ persons. ELA is an increasingly well recognized risk factor for a broad range of poor health outcomes (Dube et al., 2003). To guide further studies incorporating ELA, we developed a heuristic model based on brain function as shown in Fig. 1, to describe

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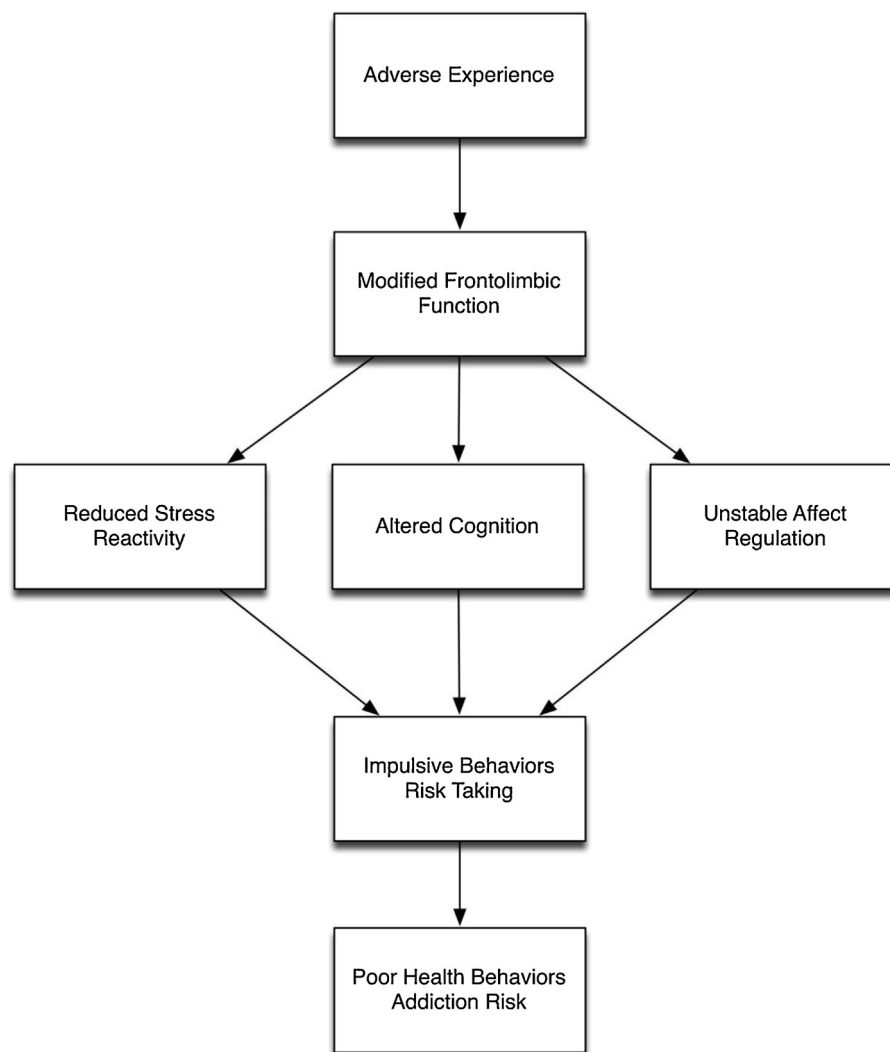


Fig. 1. Model outlining the impact of early adverse experience on stress reactivity, cognition, and affect regulation.

characteristics of ELA-exposed persons in the OFHP cohort that may account for risk for alcohol and other substance use disorders (Lovallo, 2013). The model assumes that ELA during childhood and adolescence alters development of limbic system and prefrontal cortex structures and their connections, with consequences that are seen in three domains: (a) stress reactivity, (b) cognition and behavior, and (c) psychological characteristics.

In the OFHP cohort, persons higher in ELA have blunted cortisol and heart rate reactivity to mental stress (Lovallo et al., 2012b), and they show diminished cognitive capacity and enhanced behavioral impulsivity (Lovallo et al., 2012a). These findings led us to ask whether the effects of ELA extended to the domain of psychological characteristics of the OFHP volunteers and whether these were more strongly represented in FH+ persons who had experienced ELA. Accordingly, the present paper examines personality characteristics and altered regulation of affect in high-ELA persons as a third dimension of increased risk for substance use disorders and the joint impact of ELA and FH+ on these same characteristics.

The current paper examines the relationship between demographic factors, family history, affect regulation, personality, and early life adversity. Participants in the Oklahoma Family Health Patterns (OFHP) project consist of healthy, young FH+ and FH– adults. We predicted that: (1) FH+ participants would report significantly more early life adversity than FH–, and that (2) as the number of adverse life events increased, emotional stability would diminish,

and (3) as the number of adverse life events increased, there would be a greater tendency toward poor behavior regulation and a tendency toward norm violation. We propose that FH+ individuals who report experiencing early life adversity are at greater risk for emotional instability and tendency toward behavioral undercontrol, which places them at increased risk for alcoholism.

2. Materials and methods

2.1. Project description

The major hypothesis of the Oklahoma Family Health Patterns project is that alcoholism is most likely to occur in persons with functional alterations in brain systems serving emotion experience and expression. Our goal is to study healthy non-alcohol dependent FH+ and FH– to identify markers of high risk in the domains of psychophysiological function, cognition and behavior, and personality, with an emphasis on probes of emotional response systems. Participants take part in detailed family history and psychological assessments, and undergo behavioral and psychophysiological procedures in the lab.

2.2. Participants

All volunteers who completed screening for the OFHP project were included. These participants ($N = 599$) were 18–30 years of age, in good health, free of prescription medications, and did not meet criteria for a current Axis I mental health disorder as defined by the Diagnostic and Statistical Manual of Mental disorders, 4th ed. (APA, 1994). Subjects were required to pass a urine drug screen and alcohol breath test on each day of testing. All participants signed a consent form approved by the Institutional Review Board of the University of Oklahoma Health Sciences

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