Crowdsourcing Health Behavior: Adverse Childhood Experiences, Tobacco Use, and Obesity

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Abstracts will be considered for both poster and platform presentations

Addiction

BACKGROUND
Adverse childhood experiences (ACEs) increase the risk of chronic health problems and health risk behaviors; there is a dose-response relationship between ACEs and premature mortality (Felitti et al 1998). Tobacco cigarette use and obesity are both prevalent, costly to the health care system, and preventable (Moriarty et al 2012). Those who experience ACEs have higher rates of smoking initiation and lower successful quit attempts (Anda et al 1999; Ford et al 2011; Strine et al 2012; Van Loon et al 2005). Like smoking, ACEs contribute to an individual's likelihood to develop obesity (Danese & Tan 2014).
The purpose of the current study was to replicate previous research using a novel online crowdsourcing approach using Amazon's Mechanical Turk (mTurk). We hypothesized increasing childhood ACEs would be associated with increased tobacco cigarette use and obesity.
METHODS
Participants were recruited from mTurk and acknowledged informed consent. The University of Kentucky Medical Institutional Review Board approved all study procedures.
All participants were 18 or older and reported no illicit drug use within the past three months and five or less lifetime drug uses. The primary focus of sampling was based on tobacco cigarette use; weight/obesity was a freely varying range.
Qualifying participants (N =165) completed the full study, but attention checks were used to identify inconsistent responding and led to the removal of 16 participants. Participants filled out the Adverse Childhood Experience (ACE) questionnaire and standardized health questionnaires. Participants were divided into smoking (N = 74) and non-smoking (N = 75) groups as well as categories of self-reported BMI of <30 (N = 97) and ≥ 30 (N = 52).
RESULTS
On average, the sample was 38.6 years old (SD = 12.4), mostly female (66.4%), employed (82.6%), white (83.0%), and college educated (63.1%).
Unadjusted comparisons indicated that individuals with 1, 3, or 4+ ACEs had a 3.77, 6.40, and 4.96 greater odds of cigarette smoking compared with those with no ACES (p values < .05). The association for 4+ ACEs and smoking remained in adjusted comparisons, with a 4.30 greater odds of cigarette use reported by individuals with 4 or more + ACEs (p = .039).
Unadjusted comparisons indicated that individuals with 2, 3, or 4+ ACEs had an 8.71, 6.33, and 6.65 greater odds of obesity compared with those with no ACES (p values < .05). Consistent results were observed in adjusted comparisons, with any ACEs significantly associated with a greater odds of obesity (ORs > 7.46, p values < .05). The inclusion of smoking status in the model did not change the direction or significance of these findings.
DISCUSSION
ACEs were associated with increased risk of both obesity and tobacco cigarette use. The negative impact of ACEs was observed in a sample without a history of illicit drug use and after controlling for alcohol use. Crowdsourcing is a viable platform for studying ACEs and adult health behavior.