Journal of Affective Disorders 186 (2015) 219–225

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Contagion from peer suicidal behavior in a representative sample of American adolescents

Jason R. Randall [a,b,*], Nathan C. Nickel [a,b], Ian Colman [c]

[a] Department of Community Health Sciences, University of Manitoba, Canada
[b] Manitoba Centre for Health Policy, University of Manitoba, Canada
[c] Department of Epidemiology and Community Medicine, University of Ottawa, Canada

ARTICLE INFO

Article history:
Received 1 April 2015
Received in revised form
29 June 2015
Accepted 3 July 2015
Available online 26 July 2015

Keywords:
Attempted suicide
Child
Adolescent
Propensity score
Depression
Prospective
Self-injurious behavior
Risk factors

ABSTRACT

Background: Assortative relating is a proposed explanation for the increased occurrence of suicidal behavior among those exposed to suicidal peers. This explanation proposes that high-risk individuals associate with each other, and shared risk factors explain the effect.
Methods: Data were obtained from the ADDhealth longitudinal survey waves I and II (n=4834 school attending adolescents). People who reported peer suicidal behavior in the first wave were identified and classified as the exposure group. Potentially confounding variables were identified, and propensity scores were calculated for the exposure variable using logistic regression. Inverse-probability-of-treatment weighted regression estimated the effect of exposure on the risk for a suicide attempt during the first two waves.
Results: Weighted analysis showed that the group exposed to a friend's suicide attempt had a higher occurrence of suicide attempts in both waves. Exposure to peer suicide attempts was associated with increased suicide attempts at baseline (RR=1.93; 95%CI= 1.23–3.04) and 1-year follow-up (RR=1.70; 95%CI= 1.12–2.60).
Limitation: Only two consecutive years of data are provided. Misclassification and recall bias are possible due to the use of self-report. The outcome may be misclassified due to respondent misunderstanding of what constitutes a suicide attempts, versus non-suicidal self-injury. Non-response and trimming reduced the sample size significantly.
Conclusions: Assortative relating did not account for all the variance and is currently not sufficient to explain the increased risk after exposure to peer suicidal behavior. Clinicians should assess for exposure to suicidal behaviors in their patients.

1. Introduction

Suicidal behavior amongst youth is a significant cause of morbidity and mortality (Hawton and van Heeringen, 2009; Nock et al., 2013, 2008). A range of psycho-social-environmental factors have been linked with suicidal behavior (Bolton and Robinson, 2010; Cavanagh et al., 2003; Cooper et al., 2005; Harris and Barraclough, 1997; Hawton and van Heeringen, 2009; Hawton et al., 2003; Nepon et al., 2010; Nock et al., 2013). However, there are still uncertainties about the causes of suicidal behavior, and factors that could be addressed to prevent suicidal behavior amongst adolescents (Bohanna, 2013; Hawton and van Heeringen, 2009). One particular area of sustained controversy has been whether the occurrence of suicide clusters indicates the existence of 'suicide contagion' (Davidson and Gould, 1989; Gould et al., 1994; Joiner, 2003, 1999; McKenzie et al., 2005; Robbins and Conroy, 1983; Wasserman, 1984). The existence of a causal effect from exposure to suicidal peers is contentious (Joiner, 2003). Some researchers have argued that suicide clusters occur because suicidal individuals cluster together (Joiner, 2003). This competing hypothesis will be referred to as the 'assortative relating hypothesis'. It suggests those at high risk of suicidal behavior are more likely be friends with other high risk individuals. This hypothesis suggests that the increased risk among those exposed to suicidal behavior would be explainable by shared risk factors, and is merely an association and not a causal relationship.

Previous studies have not provided definitive evidence for, or against, assortative relating as the sole cause of increased risk after

Abbreviations: RR, risk ratio

* Correspondence to: Community Health Sciences, Faculty of Medicine, 408–727 McDermot Ave. University of Manitoba Bannatyne Campus, Winnipeg, Canada MB R3E 3P5.
E-mail address: Jason_Randall@cpe.umanitoba.ca (J.R. Randall).

http://dx.doi.org/10.1016/j.jad.2015.07.001
0165-0327/

exposure to suicidal peers (Brent et al., 1992; De Leo and Heller 2008; Gould et al., 1994; Haw et al., 2013). Recent research has examined the association of peer suicidal behavior and the risk of suicide attempts in adolescents, and found evidence for an increase in risk (Abrutyn and Mueller, 2014; Feigelman and Gorman, 2008; Nanayakkara et al., 2013; Swanson and Colman, 2013). However, these studies have generally adjusted for a small number of confounding factors, such as depression and substance use. In order to discount this alternate explanation as the sole reason for the association, a wide range of potential variables involved in assortative selection of peers need to be controlled. The primary hypothesis is that being exposed to peer's suicidal behaviors will increase the risk of suicide attempts, even after controlling for the variables suspected of being responsible for the association under the assortative relating hypothesis. A secondary hypothesis is that this effect, if it exists, will be concentrated in those with pre-existing risk factors (e.g. depression, substances abuse, stressful environment). This article will test these two competing theories of the association between exposure to suicidal behavior and suicide attempts: assortative relating, and a true effect of exposure (i.e. contagion). This article will examine whether assortative relating can entirely explain the association.

2. Methods

2.1. Sample

This study analyzed data in the public use dataset from the ADDhealth survey. This survey began in 1994 and currently contains four waves worth of data. The survey is longitudinal and surveys the same participants over multiple years. We limited analysis to the first two waves of data, referred to as 'Year I' and 'Year II' in this article, since they provided consecutive years of assessment. The third and fourth waves occur with considerable lags in time, preventing the use of a cross-lagged design. Also, the failure to find an association in the later waves could be due to the multi-year gaps rather than the absence of any effect (e.g. increased risk could be time limited). These waves also occur outside of adolescence, when exposure to peer suicide could be a strong risk factor.

Year I and Year II were undertaken in consecutive years in 1994/5 and 1995/6. The participants were aged 11–20. Most respondents were between 13 and 17 years of age. In the public use dataset, the first wave of data sampled 6504 people. The second year surveyed 4834 of the original sample in the following year. People in the first year were dropped during the second year for two reasons; they were in grade 12 during the first year, or they were enrolled as part of two specific sub-samples. This study

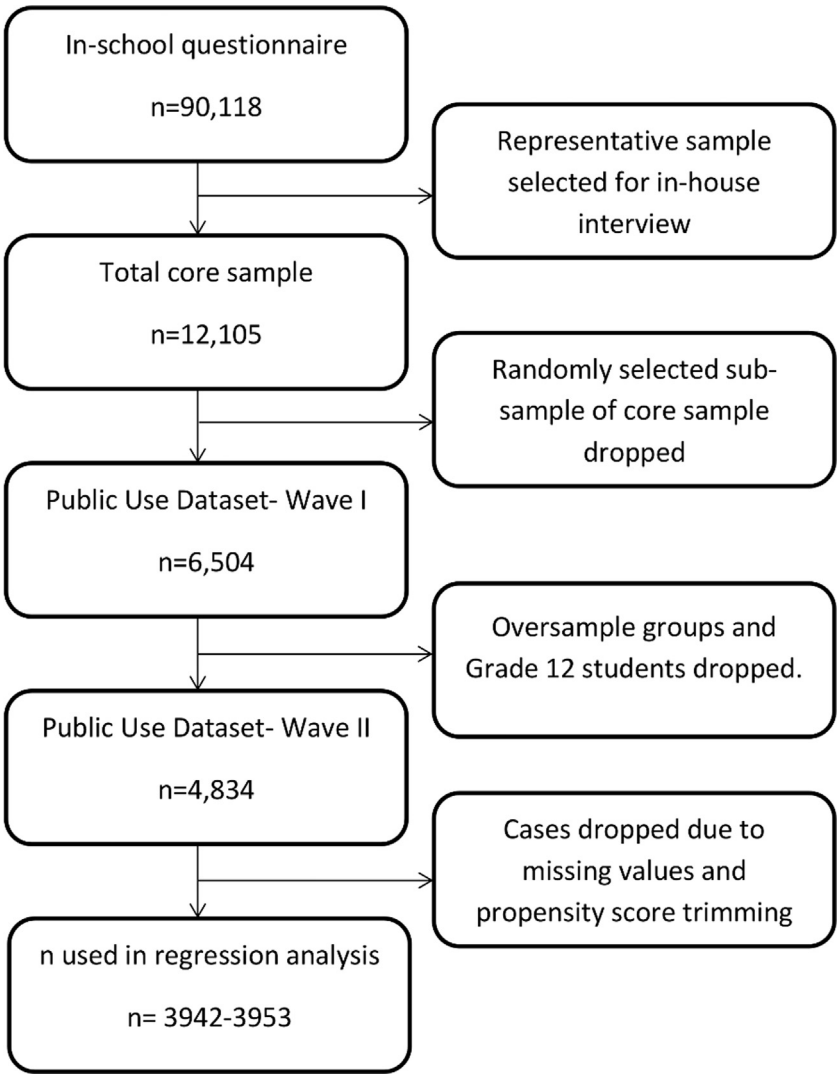

Fig. 1. Sampling flowchart.