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Personality as a mediator of demographic risk factors for suicide attempts in a community sample

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Abstract

The aim of this study was to determine whether personality might partially explain associations between sociodemographic factors and self-reported suicide attempts. This analysis was motivated by reports that certain personality traits are logical targets for intervention, whereas sociodemographic characteristics are not generally modifiable. Data were from a postal survey sent to community residents who were previously selected at random (N = 912). Age, gender, health-insurance status, education, self-reported health, and marital history were identified as relevant sociodemographic predictors of having made one or more lifetime suicide attempts. Risk associated with each of these variables was mediated by the personality traits of self-directedness (SD) and harm avoidance (HA). In a multiple logistic-regression analysis constrained to sociodemographic predictors, only young age, female sex, poor self-reported health, and Medicaid status remained as predictors of suicide attempts. When personality factors were added to the model, all of the sociodemographic predictors except Medicaid status were rendered nonsignificant or marginally significant. Risk associated with gender was primarily related to HA, risk associated with poor self-reported health was mediated by both HA and SD, and the risk associated with young age was primarily mediated by SD; the last was the largest mediation effect observed. In contrast, risk associated with receipt of Medicaid, presumed to indicate low socioeconomic status, was not mediated by personality. We conclude that risk associated with certain nonmodifiable demographic factors is often mediated by potentially modifiable intrapersonal factors, such as SD.

1. Introduction

Risk for suicidal behavior differs markedly among individuals; factors such as demographic differences, personality traits, and psychiatric disorder all contribute to individual differences in risk [1,2]. The question of whether various risk factors contribute independently to suicidal behavior or whether some risk factors are confounded with more basic individual differences has not been thoroughly investigated but is highly relevant from the standpoint of risk assessment and prevention. Although an overwhelming majority of completed suicides occur in the context of psychiatric disorder [3-6], most individuals with psychiatric disorder are not suicidal, and a significant number of individuals with suicidal ideation do not meet full criteria for any psychiatric disorder [7]. Therefore, additional information about the characteristics of those at risk and plausible means of prevention are needed.

Epidemiologic surveys have documented various demographic risk factors associated with self-reported suicide attempts [2,8,9]. Female sex, young age, low socioeconomic status (SES), and disrupted marriage are among the well-documented correlates of suicidal behavior [2,9-11]. However, demographic risk factors may not act independently from other potentially modifiable risk factors. Using self-reported attempts as an outcome variable, Kessler et al [2] showed that psychiatric disorder mediates some of the risk associated with demographics. Thus, part of the risk associated with demographic factors, which are not modifiable, might be ameliorated through identification and treatment of psychiatric illness. In this report, we examine the role of personality variables as another set of potential mediators of risk of suicidal behavior in the general population. Using data collected through a mailed survey administered to residents of the St Louis, Mo, metropolitan area (N = 912), we examined whether personality variables would account for risk associated with demographic and other variables using self-reported suicide attempts as an outcome.

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The assessment of personality used in this study, Cloninger's Temperament and Character Inventory (TCI), is a theoretically based 7-factor model of personality; it measures 4 temperament scales and 3 character scales [12]. Although both temperament and character are moderately heritable [13], there is sound theoretical and empirical justification for viewing certain aspects of personality as being malleable. Changes in personality dimensions, including self-directedness, harm avoidance, and cooperativeness have been shown to result from treatment and to be associated with clinical improvement. Such changes have been documented in major depression, dysthymia, eating disorders, and borderline personality disorder [14-18]. The observation that certain scores, particularly in the character domain, respond to psychotherapeutic intervention is highly consistent with theory [17]. Scores on TCI scales exhibit considerable overlap with personality disorder symptoms [12,19,20]. Accumulating evidence suggests that improvement in personality disorder symptoms occurs in both naturalistic and treatment studies [21-23]. Therefore, observed changes in TCI scores that correlate with clinical improvement may correspond to meaningful adaptive development rather than simply indicating transient state effects. This report adopts the point of view that adaptive changes in personality are possible. Accordingly, our central hypothesis is that personality dysfunction might be a more proximal risk factor for suicidal behavior than sociodemographic variables. If this is the case, clinically addressable risk factors might account for the risk associated with factors that are otherwise not modifiable.

We undertook the following steps to examine our hypothesis: first, sociodemographic correlates of self-reported suicide attempts, disclosed on a lifetime basis, were identified. Second, a personality-risk model for self-reported suicide attempts was determined. The degree to which personality factors account for risk associated with individual sociodemographic risk factors was then assessed. Finally, using multiple-logistic regression modeling, a multivariate model of sociodemographic risk factors was computed, and the degree to which personality factors mediate the risk from that model was examined.

Medicaid status was used as one of several socioeconomic indicators, although receipt of Medicaid could indicate low income, long-term health impairment, or both. To help clarify this, we added self-reported health status as an additional variable to our selection of sociodemographic factors. We will refer to all nonpersonality risk factors as "sociodemographic and general health" risk factors.

2. Methods

2.1. Subject identification and recruitment

The St Louis Personality Health and Lifestyle Survey was administered between November 2001 and February 2002 to a stratified, random sample of adults, aged 18 years and older. Random digit dialing methodology was used to recruit participants from St Louis City, St Louis County, and the 5 immediately surrounding counties in Missouri and Illinois. Demographic targets were set on the basis of county (or city), sex, age, and race using 2000 US Census data for the equivalent geographic sampling frame. In one county, after the random digit dialing list was exhausted, the sample was augmented with additional ethnic/racial minority subjects (n = 12). When potential participants were identified via telephone, the study and compensation procedures were explained, and a brief screening interview was conducted. Subjects were excluded if they were under 18 years of age, were cognitively impaired, or belonged to a demographic stratum for which the recruitment quota had already been met. Among completed screening interviews, 3292 eligible subjects were identified. Of the eligible respondents, 1147 agreed to participate, gave verbal informed consent, and were mailed a survey booklet. Consent was further documented by return of a completed survey booklet and signed acknowledgment of consent. Completed surveys and consent documentation were returned by 917 of the eligible respondents. Thus, the net response rate was 28% (917/3292), and the mailed response was 80% (917/1147). This work uses data from the 912 subjects who responded to the outcome question. Procedures were approved by the Washington University School of Medicine Institutional Review Board. All subjects provided informed consent before completing the study. Because of differential response rates among demographic groups, our sample is slightly underrepresentative of males (48% targeted vs 45% recruited), African Americans (20% targeted vs 15% recruited), and persons aged 18 to 34 (29% targeted vs 24% recruited). Although the sample is not precisely matched to the metropolitan area on demographic variables, it is a randomly selected sample that is demographically diverse and approximately reflective of the composition of the metropolitan area. A summary of the demographic characteristics of the sample is provided in Table 1. Additional methodological details are provided in Ref. [24].

2.2. Assessments

Participants completed a self-administered survey booklet that included questions on sociodemographic characteristics, mental and physical health, personality, and general functioning. Past lifetime suicide attempts were assessed with a single question: "Have you *ever* attempted suicide?" with a simple yes/no response option. The question was part of a series of questions about general mental health and treatment history.

2.3. Sociodemographic variables

Because the marital-status questions for the survey were focused on current situation, we used the response to the following question as a predictor variable in lieu of current marital status: "How many times have you been married