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HEALTH INSURANCE ACCESS AND COUNSELING RECEIPT AND THEIR ASSOCIATION WITH LATER DEPRESSIVE AND SUICIDIAL SYMPTOMS

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OVERVIEW

Mental health disorders that begin in adolescence often –though not always – persist into early adulthood. The continuity of mental health problems may reflect biological and genetic origins, ongoing social and personal challenges, poor quality mental health services, and/or reflect low use of mental health services in adolescence and young adulthood. Research examining factors related to low service use has identified the inability to pay for services as one of several causes.[1] This Research Brief analyzes panel data from a baseline sample of 9,969 young people participating in ADD Health (the National Longitudinal Study of Adolescent Health), to assess whether the receipt of supportive (psychological or emotional) counseling and access to health insurance in adolescence are related to the persistence of adolescent depression and/or suicidality in young adulthood.

Results indicate that teens reporting symptoms of depression or suicidality in adolescence are 2.8 times more likely than asymptomatic teens to report these symptoms in young adulthood. The effects of receiving counseling and having health insurance during adolescence on later symptoms of depression or suicidality varied, depending on whether moderate-to-severe symptoms of depression or suicidality were reported during adolescence.

BACKGROUND

Studies suggest that teens who experience mental health issues during adolescence are more likely than their peers to experience mental health issues in young adulthood.[2,3,4] Fortunately, internalizing symptoms, such as depressed mood and suicidal ideation, can often be ameliorated by positive personal, interpersonal, and environmental factors. For example, positive relationships with peers, mentors, teachers, and parents have been associated with fewer internalizing symptoms and lower levels of psychological distress[5,6,7,8,9] and fewer health-risk behaviors known to heighten risk for depression.[10,11] We also know that some forms of therapy, such as cognitive behavior therapy (alone, or in combination with serotonin selective reuptake inhibitors), [12] can be effective at treating and preventing depression, [13,14,15] and reducing internalizing problems in youth.[16,17,18] It is unclear, however, whether the use of supportive counseling – or factors which promote its use, such as health insurance – lowers the persistence of mental health issues from adolescence to young adulthood.

This study uses panel data from the *National Longitudinal Study of Adolescent Health (Add Health)*[19] to assess whether mental health service access and use can reduce persistent symptoms of moderate to severe depression and/or suicidality into young adulthood. Although suicidality is not always associated with a psychiatric disorder, about 90% of persons who commit suicide in

the U.S. had suffered from a mental health or substance use disorder, and 51% of those who attempt suicide have a dual-diagnosis of mood disorder and substance use disorder.[20] Adolescents who experience depression have a much greater risk of committing suicide than adolescents who do not report depressive symptoms.[21] Although the current study cannot establish causality, it seeks to assess whether counseling use or insurance access are associated with fewer negative symptoms of adolescent depression and suicidality over time.

CURRENT ANALYSES

Our analyses follow a sample of adolescents for seven years, from ages 12 to 17 (at Wave I) to ages of approximately 19 to 24 (at Wave III), to examine the longitudinal association between adolescent and young adult mental health issues. Adolescent reports of moderate to severe depressive and/or suicidal symptoms were assessed at two time points (Waves I and II), spaced one year apart. A dichotomous variable combining data from both waves was constructed, with a '0' indicating the absence of depressive/ suicidal symptoms and a '1' indicating that depressive and/or suicidal symptoms were reported at one or both waves.

Analyses sought to assess the degree to which self-reported depressive and/or suicidal symptoms in adolescence increase the likelihood of experiencing depressive and/or suicidal symptoms in young adulthood. Another goal of this study was to examine whether counseling and health insurance (public and private) would mitigate the strength of this association, recognizing the following limitations: (a) information about someone having health insurance does not indicate whether mental health services are covered or whether there are low deductibles and copayments for these services; (b) information about having received counseling does not indicate the type, quality, or duration of counseling services, nor the issue for which counseling was received. For more information about items used, scoring methods, and variable coding, see pages 5 to 6 in the section entitled "Data Source and Methodology."

DESCRIPTIVE ANALYSES

During adolescence, approximately 1 out of 8 (12.5%) respondents were depressed, and approximately 1 out of 5 (19.7%) had suicidal thoughts or attempts at Wave 1 or Wave 2. The proportion of adolescents reporting depression in this sample is higher than national prevalence rates, perhaps due to the fact that they are not based on one wave of data collection. The proportion of adolescents reporting suicidal ideation/attempt in this sample, although higher than expected, is slightly *lower* than the national prevalence rate in 1995, which, according to data obtained from the Youth Risk Behavior Survey were 24 percent (see CDC Youth Online-- High School YRBS at http://apps.nccd.cdc.gov/youthonline). Overall, approximately 1 out of 4 adolescent respondents (2,596 out of 9,969) reported symptoms of moderate to severe depression and/or suicidality.

FINDINGS

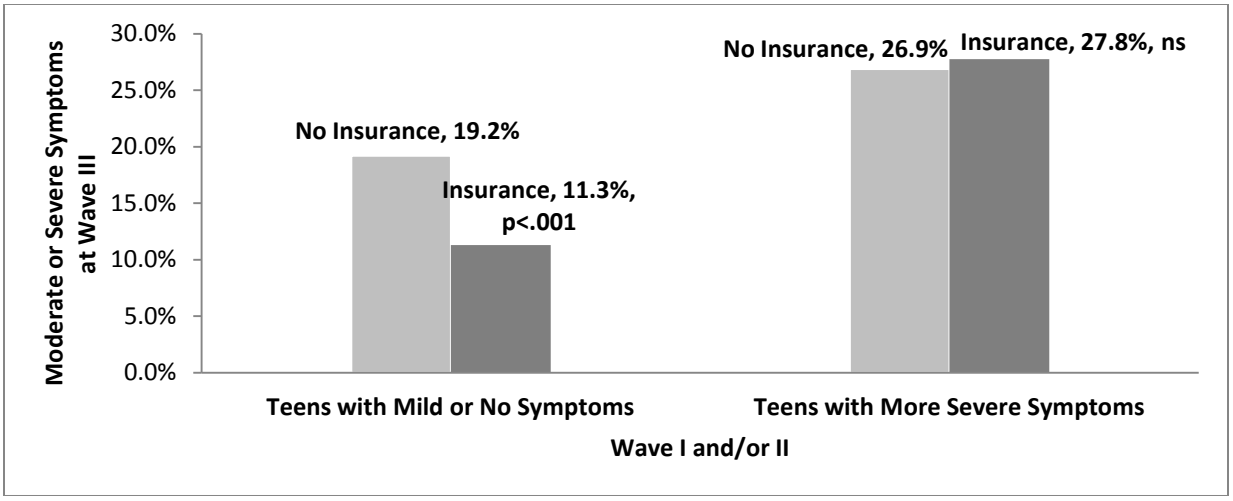
Consistent with research suggesting the stability of mental health disorders over time, teens reporting moderate to severe depression and/or suicidality in adolescence were more than twice as likely to report the same issues as young adults, compared with teens with no symptoms of depression and/or suicidality, controlling for age, gender, race/ethnicity, parent education, and family income (OR=2.85, $p<.001$; 22% vs. 12%).

The Role of Health Insurance and Counseling

Analyses examined whether depressed and/or suicidal teens who had access to health insurance or who had received psychological or emotional counseling had a lower likelihood of reporting depression and/or suicidality in young adulthood. About 82 percent (n=7,362) of teens reported having access to health insurance over the past year; and about 10 percent (n=894) of teens reported having received psychological or emotional counseling in the past year.

Health Insurance. Findings suggest a protective effect of having had health insurance for individuals with no reported depressive or suicidal symptoms in adolescence but not for those who reported these symptoms in adolescence (see Figure 1). Specifically, among young adults who had not reported any depressive or suicidal symptoms as adolescents, those without health insurance at the first wave of data collection were more likely than those with health insurance to report depressive or suicidal symptoms (19.2% vs. 11.3%, p<.001), controlling for covariates. Health insurance did not make a difference, however, for young adults who reported moderate to severe symptoms of depression or suicidality as adolescents. Among respondents who reported depressive and/or suicidal symptoms as adolescents, those who were insured at Wave 1 were only slightly less likely to report symptoms as young adults, and this difference was not statistically significant (26.9% vs. 27.8%, p=.93). This suggests that, for teens with no reported depressive or suicidal symptoms, having health insurance can help to reduce the risk of mental health issues in young adulthood, although health insurance alone may not be enough to help teens experiencing these issues to overcome them.

Figure 1: The association between health insurance and reported symptoms of depression and suicidality in young adulthood (predicted probabilities, N=8,934) [ns=not statistically significant)

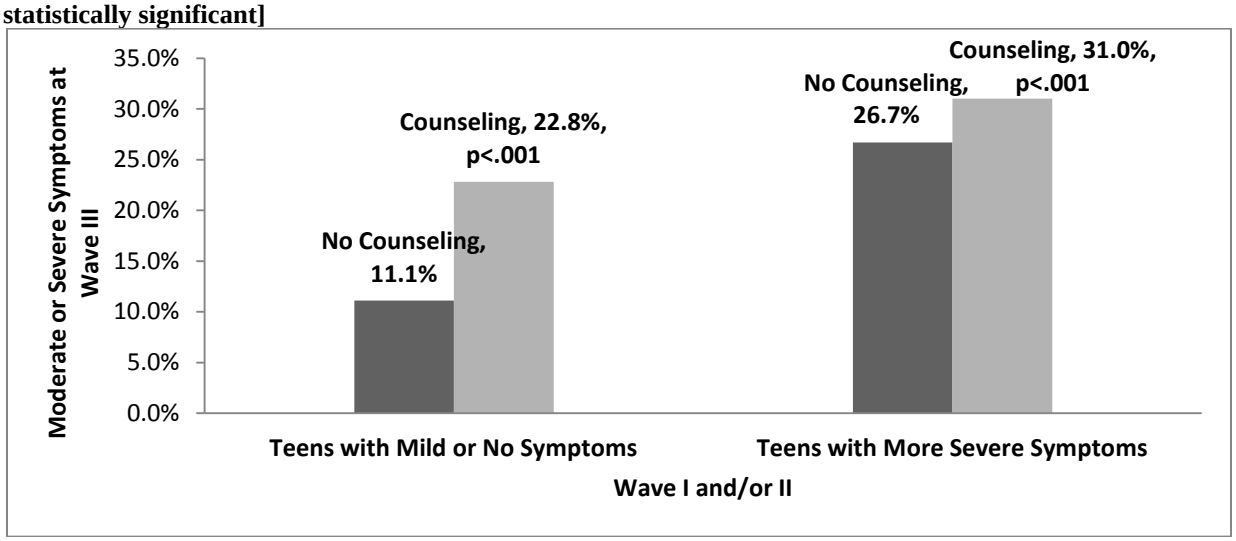


Psychological or emotional counseling. Contrary to our hypotheses, individuals who received counseling during adolescence were 1.6 times *more* likely to report depressive or suicidal symptoms as young adults (OR=1.6, p<.001), controlling for statistical covariates. However, the magnitude of the effect varied depending on whether symptoms were experienced in adolescence (see Figure 2). Teens reporting no depressive or suicidal symptoms in adolescence who received counseling were about twice as likely than teens not receiving counseling to report depressive or suicidal symptoms as young adults (22.8% vs. 11.1%, p <.001). Teens who had moderate-to-severe symptoms of depression or suicidality who received

counseling were also more likely than teens not receiving counseling to report symptoms as young adults, however the increase in percentage points was considerably smaller (31.0% vs. 26.7%, p<.001).

This unexpected finding may be explained in a number of ways. As noted earlier, we lack information about the issues leading to the use of counseling; when and how much counseling was received; and the type and quality of counseling received. For example, it is possible that asymptomatic teens may have been more likely than symptomatic teens to receive brief, low-evidence, or low-quality counseling. Another possible explanation is that teens may have received counseling for disorders that commonly co-occur or precede depression, such as anxiety disorders or substance use disorders. For example, a longitudinal study examining the development of psychiatric disorders found that generalized anxiety disorder and oppositional defiant disorder explained the association between adolescent depression and young adult depression.[22] In brief, greater detail about the circumstances surrounding the receipt of counseling would help to shed light on these findings.

Figure 2: Association between reported receipt of psychological or emotional counseling use and reported symptoms of depression or suicidality in young adulthood (Predicted Probabilities, N=9,698) [ns=not statistically significant]



MULTIVARIATE ANALYSES

We conducted logistic regressions adjusted for the design features of Add Health (e.g., sampling weights, cluster, and strata), using survey procedures for binary outcomes (using SAS 9.3), to test the association between reports of adolescent and young adult depressive and suicidal symptoms and the protective effects of counseling and health insurance, controlling for age, gender, race/ethnicity, parent educational attainment, and receipt of public assistance. The results confirmed the findings reported in this Brief.[i] One limitation of the multivariate analyses is that, compared to cases with missing data, cases with sufficient data to be included in the analytic

[i] The main effect of counseling (B=.27, p<.001), the main effect of Wave I symptoms (B=.36, p<.001), and the interaction effect between counseling and moderate to severe symptoms at Wave I (B=.17, p<.001) were positive and significant, after controlling for covariates. In the model testing the effect of health insurance, we also saw a significant main effect of Wave I symptoms (B=.37, p<.001), and the main effect of insurance was negative and non-significant (B=-.13, p=.10) and the interaction effect was negative and significant (B=-.18, p<.01).

sample were less likely to be older (55.7% versus 65.0%, p<.01) and less likely to come from families receiving public assistance at Wave I (9.4% versus 18%, p<.05). Although the use of sampling weights may have helped to reduce bias, further research is needed to validate the findings described in this brief hold with a more representative sample.

DISCUSSION AND CONCLUSION

Results from this analysis confirm previous research suggesting that teens who report mental health issues are more likely to report similar difficulties as young adults than teens who do not report mental health issues. Contrary to our hypotheses, having health insurance in adolescence had no association with depressive/suicidal symptoms among young adults who reported these symptoms during adolescence. Among teens reporting no depression or suicidal symptoms during adolescence, those with health insurance had a lower likelihood of reporting symptoms in young adulthood. Teens who received counseling during adolescence were more likely to report depressive or suicidal symptoms as young adults, whether or not they reported moderate to severe symptoms as teens.

There are several ways to interpret these findings. The lack of a protective effect of health insurance among young adults who were symptomatic teens could potentially be attributed to lower rates of mental health service use among depressed and suicidal adolescents[23,24] and, in turn, a lower likelihood of receiving benefit from treatment. Alternately, if health insurance were to predict a lower rate of depressive or suicidal symptoms in young adults across the board, this finding could be related to unmeasured family assets, such as having parents who are regularly employed at a stable job with health benefits.

The absence of a protective effect for counseling among young adults who reported depressive and/or suicidal symptoms in adolescence was not anticipated. This finding may relate to the possibility that counseling was not received at an adequate dose; counseling was not high quality or not evidence-based; or that counseling was received for a different issue apart from the internalizing symptoms being experienced. The finding that asymptomatic teens receiving counseling were even more likely than their counterparts who had not received counseling to experience depressive or suicidal symptoms as young adults may be explained by the possibility that they had been experiencing a different issue (such as anxiety or drug use) known to be highly predictive of subsequent depression or suicidality. Further research is needed to better understand this finding. Also, in light of research suggesting that only about one in four suicidal teens obtain counseling,[25] research is needed to determine whether greater access to the behavioral health benefits included with most health insurance plans would increase access not only to counseling services among teens and young adults, but also to proven forms of pharmaceutical and therapeutic treatments.

DATA SOURCE AND METHODOLOGY

These analyses use data from The National Longitudinal Study of Adolescent Health (Add Health), a nationally representative survey of U.S. students who were in grades 7 through 12 in 1994-1995. Add Health was designed to provide a broad understanding of the health and well-being of adolescents and their subsequent development. Wave I was fielded in 1994-5 and Wave II was fielded in 1996. The third phase of the survey (Wave III) was conducted seven years later in 2001-2002. The initial Wave I sample included 20,774 high school students in Grades 7 to 12 (ages 11 to 21). We restricted the sample to 9,969 students who were ages 12 to 17 at Wave I, who had valid Wave III longitudinal weights, and from whom Wave III data on questions assessing symptoms of depression and suicidality were available. The analytic sample size for chi square models testing the effects of counseling was 9,968, and the analytic sample size for models testing the effects of health insurance was 8,934**.** The final analytic sample size for the covariate-adjusted regression models were 8,812 (for counseling) and 8,699 (for health insurance).

Depression and suicide items from Waves I and II were combined to create a longitudinal variable (see page 2 for a description). To assess symptoms of depression at Waves I and Wave II, we used an abbreviated 18-item version of the Center for Epidemiological Studies of Depression Scale (CES-D),[26] which is included in the Add Health Survey. We applied a gender-based, diagnostic threshold established in prior research using the CES-D scale with adolescents to identify moderate or severe depression, adjusted for the absence of two items from the full CES-D scale.[27] We used data for two items (*During the past 12 months did you seriously consider committing suicide; How many times did you actually attempt suicide?*) to construct a dichotomous measure of suicidality, with a value of 1 assigned if respondents had seriously considered suicide in the past year, or if they had attempted suicide one or more times and a value of 0 if neither was the case). As mentioned above, the independent variable employed in this study combines Waves I and II depression and suicidal ratings (1=depressed and/or suicidal; 0=neither).

As with the Wave I/II data, a variable indicating Wave III mental health issues was constructed by using Wave III items assessing symptoms of depression and suicidality. Because this was assessed at one time-point, a dichotomous cross-sectional variable was constructed. Wave III symptoms of depression were assessed with a total of nine CES-D items. Responses were summed to for depression scores ranging from 0 to 27, with higher scores reflecting more severe symptoms. Consistent with prior studies using Add Health data, we used a diagnostic threshold of 11.[28,29] The variable measuring Wave III suicidality utilized the same questions that were asked at Waves I and II. Health insurance access was assessed at Wave I by asking parents: "In the past 12 months, has there been a time when {NAME} had no health insurance?" The receipt of supportive counseling was assessed using adolescents' responses at Wave II to the following question: "In the past year, have you received psychological or emotional counseling?"

Predicted probabilities and multivariate regression findings were obtained using survey procedures for binary logistic regressions in SAS 9.3 to adjust for cluster (school) and strata (region) and for statistical controls such as age, gender, race/ethnicity, parent education, and income

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