

Asthma, Suicidal Ideation, and Suicide Attempts: Findings From the Baltimore Epidemiologic Catchment Area Follow-Up

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Recent data from general medical inpatient and outpatient samples suggest that asthma is associated with increased likelihood of suicidal ideation.^{1–5} These findings are consistent with results suggesting that chronic physical illness is associated with higher-than-expected rates of suicidal ideation, specifically with evidence of a link between respiratory disease and suicidal ideation and suicidal behavior in medical care and community-based samples.^{3–5} The observed association between asthma and suicidal ideation is also consistent with a previously documented link between asthma and major depression.^{6,7}

In sum, although previous findings suggest that asthma is associated with increased likelihood of suicidal ideation, several methodological features of previous studies limit their generalizability for at least 4 reasons. First, with 1 exception,¹ studies to date have been conducted exclusively with clinical samples.^{4,5} Therefore, it is not clear whether or to what extent the relation between asthma and suicidal ideation is associated with factors linked with selection into treatment, or whether this reflects a true exposure-disease relation. Second, previous studies have been limited to the use of cross-sectional data.^{1–7} Therefore, conclusions about the direction of effect or sequence of onset of disorders, which would be critical to the development of intervention strategies, cannot be drawn. Third, previous studies have examined the relation between asthma and suicidal ideation^{1,3} but have not included data on the relation between asthma and suicide completion. Fourth, several previous studies have found a link between respiratory disease and suicidal ideation and suicide attempts,^{3,4} but data have not been specific to asthma, so it has not been possible to draw conclusions about asthma and suicidal behavior per se.

Objectives. We examined cross-sectional and longitudinal associations between asthma, suicidal ideation, and suicide attempt among adults in the community.

Methods. Data were drawn from 3 waves (1981, 1982, 1993–1996) of the Baltimore follow-up of the Epidemiologic Catchment Area study. Multiple logistic regression analyses were used to examine associations between asthma, asthma treatment, suicidal ideation, suicide attempt, and suicide completion.

Results. Asthma at wave 1 was associated with a significantly increased odds of suicidal ideation (odds ratio [OR]=2.33; confidence interval [CI]=1.03, 5.25) and suicide attempt (OR=3.54; CI=1.4, 8.99), which persisted independent of lifetime National Institute of Mental Health Diagnostic Interview Schedule/*Diagnostic and Statistical Manual of Mental Disorders, Third Edition* major depression and treatment for asthma at wave 2.

Conclusions. These findings provide preliminary evidence suggestive of an association between asthma and an increased likelihood of suicidal ideation and suicide attempt among adults in the community. Neither lifetime major depression nor treatment for asthma explained this relation. These results provide important directions for future research, and if replicated these data may have clinical and public health implications. (*Am J Public Health.* 2005;95:717–722. doi: 10.2105/AJPH.2003.019109)

The goal of our study was to determine the cross-sectional and longitudinal associations between (1) asthma and suicidal ideation and (2) asthma and suicidal behavior among adults in the community. We hypothesized that asthma would be associated with a significantly increased risk of suicidal ideation and suicidal behavior among adults in the community.

METHODS

Sample

The Epidemiologic Catchment Area Study was an initiative by the National Institute of Mental Health to determine the prevalence and correlates of mental disorders and mental health service utilization among adults in the US population.^{8–11} The Baltimore Epidemiologic Catchment Area Study site was 1 of 5 sites where 1-year panel surveys were conducted between 1978 and 1983.⁹ The Baltimore study began fieldwork in 1981, and the

resulting data constituted wave 1 of this study. In 1982 came a 1-year follow-up, which constituted wave 2. The target population at baseline was 175 211 adult household residents of East Baltimore. In 1981, 4238 residents were probabilistically designated; 3 481 (82%) completed interviews. Finally, 1920 individuals of the original sample, or 74% of the survivors of those interviewed in 1981, participated in wave 3 (the Baltimore Epidemiologic Catchment Area Study Followup). Further details of the method and sampling design are available elsewhere.^{8,11,12}

Measures

A range of sociodemographic variables, collected by lay interviewers using epidemiological survey methods, was obtained from participants in waves 1 and 2. The National Institute of Mental Health Diagnostic Interview Schedule (DIS), which is a standardized epidemiological assessment of mental disorders, defined by *Diagnostic and Statistical*

Manual of Mental Disorders, Third Edition (DSM-III), was also administered to each participant by trained lay interviewers.^{12,13} Data on suicidal ideation and suicide attempts was obtained as part of the DIS interview. Suicidal ideation was assessed with the question “Have you ever felt so low you thought of committing suicide?” and suicide attempt with the inquiry “Have you ever attempted suicide?”

Information on asthma at wave 1 (1981) was obtained through self-report with the following questions: “Have you ever had asthma?” and “Do you have asthma now?” Treatment for asthma at wave 1 was defined by an affirmative response to the question that followed those who reported asthma: “Are you receiving regular care from a health professional such as a doctor or nurse practitioner for this condition?” In wave 2, asthma and treatment for asthma were defined by responses to similar questions in wave 2, omitting the question on lifetime history of asthma. Data on depression and suicide were obtained in wave 3 follow-up by means of a revision of the DIS for the *DSM-III*.¹⁴ Major depression was defined by meeting criteria for DIS/*DSM-III* major depressive disorder (lifetime). Information on suicide completion was obtained by means of linkage to the National Death Index, which included deaths in the United States through 1998 (3 to 5 years after wave 3 assessment).

Statistical Techniques

Pearson χ^2 tests were used to determine cross-sectional associations between lifetime asthma and lifetime suicidal ideation and suicide attempts at wave 1 and again at wave 2. The same procedure was used to examine the longitudinal relation between asthma at wave 1 and suicidal ideation and suicide attempts at wave 2. Multiple logistic regression analyses were then used to determine the strength of the cross-sectional associations between asthma and suicidal ideation and suicide attempts in waves 1 and 2, adjusting for demographic differences. The same method was then used to determine the strength of the longitudinal association between asthma in wave 1 and suicidal ideation and suicide attempts in wave 2, adjusting for differences in demographic characteristics. First, unadjusted

odds ratios (with 95% confidence intervals) were computed, and analyses were then adjusted for differences in sociodemographic characteristics (i.e., age, gender, race) and subsequently for DIS/*DSM-III* lifetime major depression, resulting in adjusted odds ratios. The objective of these analyses was to determine whether adults with asthma had higher levels of co-occurring suicidal ideation and suicide attempts than adults without asthma. Analyses were adjusted for differences in sociodemographic characteristics and major depression to determine whether and to what extent these variables contributed to any observed relation between asthma and suicidal ideation and suicide attempts. Parallel comparisons were made between asthma at wave 1 and the risk of suicidal ideation and suicide

attempts at wave 2 longitudinally. Analyses were then additionally adjusted for treatment of asthma, to determine whether these results were driven by selection into treatment effects. Finally, Fischer exact tests were used to determine the relation between asthma at waves 1 and 2 and the risk of suicide completion at wave 3 and until 1998, which was 3 to 5 years subsequent to wave 3.

RESULTS

Sample Characteristics

At wave 1, the sample comprised 3481 community participants aged 18 years and older (Table 1). The mean age of the sample at baseline was 47.3 years (SD=19.9), and more than half (62.0%) were female. Slightly

TABLE 1—Characteristics of the Baseline Sample and Follow-Ups in 1982 and 1993–1996 Baltimore Epidemiologic Catchment Area Study

	Wave 1 (1981)	Wave 2 (1982)	Wave 3 (1993–1996)
Age, mean, y (SD)	47.26 (19.9)	45.92 (19.51)	47.7 (17.06)
Gender, %			
Male	38.0	37.2	36.8
Female	62.0	62.8	63.2
Marital status, %			
Not married	57.7	57.5	54.6
Married	42.3	42.5	45.3
Race, %			
White	63.0	62.2	63.2
Black	34.0	34.7	33.4
Other	3.0	3.1	3.4
Education, %			
High school diploma	81.2	80.3	77.3
DIS/ <i>DSM-III</i> major depression, %	4.5	4.9	5.2
Suicidality, %			
Suicidal ideation (lifetime)	7.6	7.9	9.0
Suicide attempts (lifetime)	3.3	3.4	4.0
Asthma, %			
Lifetime	7.2	7.8	6.9
Current	4.3	4.9	3.6
Treated for asthma	2.2	2.8	2.0
Total, No.	3481	2768	1920
Status at 13-year follow-up, %			
Deceased	...	21.2	24.4
Not located	...	10.6	11.9
Refused	...	6.7	11.4

Note. DIS/*DSM-III* = National Institute of Mental Health Diagnostic Interview Schedule/*Diagnostic and Statistical Manual of Mental Disorders, Third Edition*.

less than half (42.3%) were married, and the majority (81.2%) had completed high school.

At wave 1, 4.5% (n=155) of the sample had DIS/*DSM-III* lifetime major depression, 7.6% (n=266) had lifetime suicidal ideation, and 3.3% (n=115) had lifetime suicide attempts. A history of asthma (lifetime) was reported by 7.2% (251) of the sample at wave 1, with 4.3% (151) reporting current asthma in wave 1. At wave 2, 4.9% reported current asthma. In 1981, 2.2% were treated for asthma, and 2.8% were treated in 1982. At wave 3, 5.2% (99) had DIS/*DSM-III* major depression, 9.0% (172) had lifetime suicidal ideation, 4.0% (77) had lifetime suicide attempts, and 6.9% (133) had a history of asthma (lifetime). These asthma prevalence rates are consistent with previous population-based reports, such as the Centers for Disease Control and Prevention reports that the prevalence of asthma among adults in the United States population was 7.2% in 2000.¹⁵

Sociodemographic Characteristics Associated With Asthma

There were no significant differences in sociodemographic characteristics between those with and without asthma in wave 1. At wave 2, those with asthma were significantly more likely to be White than those without asthma (P=.02). There were no other statistically significant differences between those with and those without asthma. These findings are consistent with previous reports on the sociodemographic characteristics of asthma among adults in the US population.^{16,17}

Cross-Sectional Association Between Asthma and Suicidal Ideation and Suicide Attempts at Wave 1

In all cases, results are reported as rates of the outcome of interest among those with the disorder of interest (e.g., lifetime asthma) compared with rates among the control group of people with no history of asthma. At wave 1, lifetime asthma was associated with increased levels of suicidal ideation (lifetime) (P=.1) and suicide attempts (lifetime) (P=.075) although these associations did not reach statistical significance. A history of asthma (lifetime) was associated with higher levels of current suicidal ideation (P=.099) and suicide attempts in the past 12

TABLE 2—Association Among Asthma, Suicidal Ideation, and Suicide Attempts: Adults in the Baltimore Epidemiologic Catchment Area Study (n = 3481) at Wave 1 (1981)

	Percentage (No.)		
	Lifetime Asthma (n = 251) ^a	Current Asthma (n = 151) ^a	No Asthma (n = 3102) ^a
Lifetime suicidal ideation (n = 318)	12.4 (31) $\chi^2 = 2.7,$ $P = .1$	13.9 (21) $\chi^2 = 3.7,$ $P = .054$	9.2 (286)
Lifetime suicide attempt (n = 141)	6.4 (16) $\chi^2 = 3.2,$ $P = .075$	6.6 (10) $\chi^2 = 2.4,$ $P = .1$	4.0 (125)
Current suicidal ideation (n = 266)	10.4 (26) $\chi^2 = 2.7,$ $P = .099$	11.3 (17) $\chi^2 = 3.1,$ $P = .079$	7.6 (237)
Current suicide attempt (n = 115)	5.6 (14) $\chi^2 = 4.2,$ $P = .041$	5.3 (8) $\chi^2 = 2.1,$ $P = .1$	3.2 (100)

Note. Each χ^2 test compared the percentage with asthma among adults in each specific suicide ideation/suicide attempt condition with the no asthma reference group.

months (P=.044), with statistical significance for the link between lifetime asthma and suicide attempts in the past 12 months only (Table 2). Similarly, current asthma at wave 1 was associated with increased levels of lifetime suicidal ideation (P=.054) and current suicidal ideation (P=.079), although findings did not reach statistical significance (Table 2). Levels of lifetime suicide attempts (P=.1) and past 12-month suicide attempts (P=.1) were also significantly higher among those with current asthma.

Association Between Asthma and the Incidence of Suicidal Ideation and Suicide Attempts

Lifetime asthma (wave 1) was associated with increased risk of incident suicidal ideation at wave 2 (2.3% vs 1.9%) (Table 3). Current asthma was also associated with increased risk (3.1% vs 1.9%) of incident suicidal ideation at wave 1. Cell sizes were too small for reliable statistical comparisons. Current asthma at wave 1 was associated with an increased incidence of suicide attempts at wave 2 (1.6% vs 0.9%). There was no difference in the number of new suicide attempt cases at wave 2 among those with and without asthma at wave 1.

Adults with treated asthma at wave 1 had an increased risk of incident suicidal ideation at wave 3 (6.5% vs 3.6%), as did those with

treated asthma at wave 2 (7.7% vs 3.6%). A similar pattern was seen among adults with asthma at both wave 1 and wave 2 (5.9% vs 3.6%) and those with treated asthma at wave 1 or wave 2 (8.5% vs 3.6%). Adults with current asthma at wave 1 had higher levels of suicide attempts at wave 3 (1.4% vs 0.3%). The rate of incident suicide attempts at wave 3 was also higher among adults with treated asthma at wave 2 (2.6% vs 0.3%), adults with asthma at wave 1 and wave 2 (2.0% vs 0.3%), and those treated for asthma at wave 1 or wave 2 (2.1% vs 0.3%).

Association Between Asthma at Wave 1 and Risk of Suicidal Ideation and Suicide Attempts at Wave 2

Results of unadjusted analyses show that current asthma (at wave 1) was associated with increased suicidal ideation at wave 2, though the relation was not statistically significant (odds ratio [OR]=1.5; 95% confidence interval [CI]=0.81, 2.72) (Table 4). Being female (OR=2.0), younger (increase per year of age) (OR=0.97), Black (OR=3.0), and having lifetime DIS/*DSM-III* major depression (OR=16.3) were associated with a statistically significantly increased likelihood of suicidal ideation at wave 2. The relation between asthma at wave 1 and the likelihood of suicidal ideation at wave 2 was adjusted for differences in gender, age, and race, and this

TABLE 3—Incidence of Suicidal Ideation and Suicide Attempts, by Asthma Status and Asthma Treatment in the Baltimore Epidemiologic Catchment Area Study^a

	No. (%)						
	Lifetime No Asthma Wave 1 (Reference Group)	Lifetime Asthma Wave 1	Current Asthma Wave 1	Asthma Treatment Wave 1	Asthma Treatment Wave 2	Asthma Waves 1 and 2	Treatment for Asthma Wave 1 or Wave 2
Wave 2, No.	2530	216	127	...	...	...	...
New suicidal ideation at wave 2	47 (1.9)	5 (2.3)	4 (3.1)	0	...	...	...
New suicide attempts at wave 2	23 (0.9)	2 (0.9)	2 (1.6)	0	...	...	...
Wave 3, No.	1787	126	69	31	39	51	47
New suicidal ideation at wave 3	63 (3.6)	4 (3.2)	3 (4.3)	2 (6.5)	3 (7.7)	3 (5.9)	4 (8.5)
New suicide attempts at wave 3	6 (0.3)	1 (0.7)	1 (1.4)	0	1 (2.6)	1 (2.0)	1 (2.1)

Note. Calculation of percentages is based on number of individuals at risk at each wave. Columns are not mutually exclusive.

TABLE 4—Logistic Regression of Prevalence of Asthma at Wave 1 and Suicidal Ideation and Suicide Attempt at Wave 2: Baltimore Epidemiologic Catchment Area Study

Characteristic	Suicidal Ideation, Wave 2 (n = 187)				Suicide Attempts, Wave 2 (n = 86)			
	Unadjusted OR (95% CI)	AOR (95% CI) ^a	AOR (95% CI) ^b	AOR (95% CI) ^c	Unadjusted OR (95% CI)	AOR (95% CI) ^a	AOR (95% CI) ^b	AOR (95% CI) ^c
Female	2.0* (1.2, 3.6)	1.57* (1.13, 2.19)	1.57* (1.13, 2.18)	1.4 (.99, 1.97)	2.4 (0.97, 5.9)	2.61* (1.52, 4.48)	2.6* (1.51, 4.46)	2.3* (1.32, 3.99)
Age, y	0.97* (0.96, 0.99)	0.98* (0.97, 0.98)	0.98* (0.97, 0.98)	0.98* (0.97, 0.99)	0.98 (0.96, 1.0)	0.98* (0.97, 0.99)	0.98* (0.97, 0.99)	0.98* (0.97, 0.997)
Black	3.0* (1.6, 5.6)	2.3* (1.62, 3.27)	2.3* (1.6, 3.3)	2.15* (1.49, 3.08)	2.4 (0.8, 7.2)	1.71* (1.07, 2.75)	1.71* (1.07, 2.76)	1.54 (0.94, 2.5)
Asthma at wave 1 (current)	1.5 (0.81, 2.72)	1.78 (0.95, 3.35)	2.3* (1.06, 5.03)	2.33* (1.03, 5.25)	2.22* (1.05, 4.7)	2.37* (1.1, 5.09)	3.41* (1.39, 8.33)	3.54* (1.4, 8.99)
Treatment for asthma at wave 1	0.8 (0.1, 7.6)	...	0.54 (0.15, 1.93)	0.41 (0.11, 1.59)	.0007 (0, 2.4)	...	0.36 (0.07, 1.92)	0.27 (0.05, 1.55)
Depression	16.3* (9.7, 27.3)	...	...	9.93* (6.37, 14.27)	22.0* (10.5, 46.0)	...	...	9.78* (5.9, 16.21)

Note. OR = odds ratio; CI = confidence interval; AOR = adjusted odds ratio.

^aAdjusted for gender, age, and race.

^bAdjusted for gender, age, race, and treatment for asthma.

^cAdjusted for gender, age, race, treatment for asthma, and major depression (lifetime).

*P < .05.

resulted in little change in the observed association (OR=1.78; 95% CI=0.95, 3.35). After additionally adjusting for the effects of treatment for asthma on the relation between asthma at wave 1 and suicidal ideation at wave 2, asthma at wave 1 remained associated with a significantly increased likelihood of suicidal ideation at wave 2 (OR=2.3; 95% CI=1.06, 5.03). Lifetime DIS/*DSM-III* major depression was included in the final model to investigate the contribution of major depression to the relation between asthma and suicidal ideation. Results suggested that major depression had very little detectable effect on this association (OR=2.3; 95% CI=1.03,

5.25). Current asthma (wave 1) was associated with a significantly increased likelihood (OR=2.22; 95% CI=1.05, 4.7) of suicide attempts at wave 2 (Table 4). Lifetime major depression was also associated with a significantly increased likelihood of suicide attempt (OR=22.0; 95% CI=10.5, 46.0) at wave 2.

After adjusting for differences in gender, age, and race, asthma was significantly associated with increased likelihood of suicide attempts (OR=2.37; 95% CI=1.1, 5.09) at wave 2. This association persisted, increasing in strength, after additionally adjusting for treatment for asthma (OR=3.41; 95% CI=1.39, 8.33) and then for lifetime major de-

pression (OR=3.54; 95% CI=1.4, 8.99) in the final model. Being female (OR=2.3), younger (decreased risk with each increasing year of age) (OR=0.98), and having lifetime major depression (OR=9.78) were associated with a significantly increased likelihood of suicide attempts at wave 2. A parallel analysis of the associations between asthma and suicidal ideation and suicide attempts at wave 3 were not included in Table 4 as the cell sizes became too small for reliable comparisons. For instance, the number of available respondents with both current and treated asthma at wave 4 was approximately half the number available at wave 2 (Table 1).

DISCUSSION

We have addressed the relation between asthma and suicidal ideation and suicide attempts, with several methodological improvements over previous studies. First, our study used a general population sample to examine the association between asthma and suicidal ideation among adults aged 18 years and older in the United States. This advantage enabled us to determine whether the previously observed links between asthma and suicidal behavior in younger adults¹ and clinical samples^{4–6} are generalizable to a nationally representative adult population. These results provide preliminary evidence suggesting that an association between asthma and suicidal ideation is evident among adults in the community.

Second, we used longitudinal data to examine the sequence of the association between asthma and suicidal ideation and suicide attempts, whereas previous studies were limited to the exclusive use of cross-sectional data. Overall, we found evidence indicating that the association between asthma and suicidal ideation extends longitudinally with asthma at wave 1 associated with an increased likelihood of suicidal ideation and suicide attempts at wave 2, although the link was not statistically significant in all analyses and varied in strength with differing time periods of comparison.

Third, we examined the relation between asthma and suicide attempts in the general adult population. Results of the present study show that asthma is also associated with suicide attempts with this pattern of the association consistent throughout. This finding is consistent with and extends previous work by showing a relation between asthma and suicidal ideation and suicidal behavior over time.^{1–6} The lack of statistical significance at the $P < .05$ level of this association in several cases could be due to small cell sizes, but the finding is necessarily preliminary as this lack of statistical significance in many comparisons necessitates caution and careful consideration of the meaning of these data.

Fourth, we investigated whether treatment of asthma was associated with increased likelihood of suicidal ideation and suicide attempts. Our results show that

asthma is associated with significantly increased odds of suicidal ideation and with suicide attempts, and this association persists after adjusting for asthma treatment and major depression, but that treatment for asthma does not appear to significantly influence this relation in this data. The results also suggest that major depression is not likely to be a key factor in this link.

The mechanism of the observed association between asthma and suicidal ideation, and asthma and suicide attempts, remains unclear. These data may help to rule out several possibilities, provide preliminary support for others, and contribute useful information for directions for additional research. First, these data suggest that an association between asthma and suicidality is not solely due to depression, as lifetime DIS/*DSM-III* major depression did not contribute significantly to this link. Second, although it has previously been suggested that pharmacologic treatment of asthma may be associated with depressive symptoms, these data do not suggest that the treatment for asthma has a significant impact on suicidal ideation or suicidal behavior, because the associations between asthma and suicidal ideation and suicide attempts remain significant after adjustment for treatment in multivariate models. Still, the lack of association between treatment for asthma and suicidal ideation and suicide attempts must be considered tentatively because the information on treatment for asthma was not specific to type of medicine and therefore is not adequate to confirm or rule out this possibility. Future studies that can more closely investigate the relation between asthma severity—as well as depressive disorders and other mental disorders, such as anxiety and substance use disorders—and the risk of suicidal ideation and suicidal behavior among individuals with asthma are needed to further clarify the potential feasibility of these hypothesized explanations. In addition, studies that include more detailed information on the use of specific asthma medicines and the frequency of use in examining the relation between asthma and suicidal ideation and suicide attempts are needed.

There were 6 completed suicides in the follow-up sample at wave 3 (1993–1996); 1 of the victims had asthma in 1981. This was

a statistically significant difference ($\chi^2 = 10.4$, $df = 1$, $P = .018$) compared with those without asthma and suggests that the relation between asthma and completed suicide may be an important avenue for future studies. The small cell size in the current study, however, requires replication of this finding in a larger data set.

Limitations

Limitations of this study should be carefully considered when interpreting our findings. First, asthma diagnoses were limited to self-report. We were able to use 12-month diagnoses, rather than lifetime diagnoses, and this may have improved accuracy, yet we have no data on lung function (e.g., spirometry), which can be used to document physical evidence of reversible airway disease.^{15,16} A negative result on methacholine challenge, for instance, helps to rule out asthma. Yet no single test is adequate to definitively diagnose asthma,¹⁷ because the diagnosis is clinical and based on history, impairment, and clinical judgment as evaluated and then diagnosed by a clinician.^{16,18} The most common method for measuring asthma prevalence in epidemiological studies worldwide is self-report of wheeze, breathlessness, and asthma. Therefore, these data should be comparable with previous epidemiological studies at a minimum.

Second, as noted earlier, available information on the specific forms of asthma treatment, as well as frequency and timing of treatment initiation, was limited, and this adds to the lack of specific conclusions that can be drawn from these data regarding the impact of medication use on the risk of suicidal ideation and suicide attempts.

Third, small cell sizes in several of the groups may have limited our ability to detect significant differences. The consistency of these associations, despite the lack of statistical significance in some of the results, supports the tentative conclusions. Still, it is necessary to consider these results preliminary. In light of the inconsistency in statistical significance, despite consistency in the direction of findings, the results should be considered provisional until replicated. Although the data set is large, several cell sizes are small, and replication with a larger data set may be worthwhile.

Fourth, as these data were collected approximately 20 years ago, replication with more current samples is required, because treatments for asthma have changed considerably during the past 2 decades.

Conclusions

These findings are consistent with clinical studies^{2,4,5,6} and cross-sectional community-based studies showing a link between respiratory disease and suicidal ideation and suicide attempts.^{1,3} Given the epidemic rise in prevalence of asthma especially among youths in recent years, the identification and clarification of potential links with suicidal ideation and behavior are of public health concern. New research that investigates ecological links between suicidality and asthma prevalence and treatment in various high-risk segments of the population may provide data that, in addition to information on the detailed treatment and severity of asthma, will help to more completely illustrate the overlap of these problems. If these findings are replicated, the data may collectively indicate that persons with asthma constitute a group that warrants closer mental health screening, including suicidal ideation and suicidal behavior. Future studies that investigate these associations and include additional information on familial, psychosocial, and environmental risks for both asthma and suicidal ideation and suicidal behavior may be informative in furthering our understanding of the possible etiologic link between these 2 public health problems. ■

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This article was accepted April 11, 2003.

Contributors

R.D. Goodwin and W.W. Eaton drafted the article, planned and carried out analyses, and wrote up results. W.W. Eaton was responsible for data collection, funding, and management.

Acknowledgments

This work was supported by National Institute of Mental Health (grants MH47447 and MH64736).

Human Participant Protection

This study was approved by the institutional review board at Johns Hopkins University.

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