

ORIGINAL ARTICLE

Disposition of emergency department patients with psychiatric comorbidity: results from the 2004 National Hospital Ambulatory Medical Care Survey

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Background: Few emergency department (ED) studies have examined how psychiatric comorbidity relates to hospitalisation decisions.

Methods: We assessed the relationship of psychiatric comorbidity to hospitalisation decisions among ED patients in the 2004 National Hospital Ambulatory Medical Care Survey.

Results: Patients with psychiatric comorbidity were five times more likely to be hospitalised than patients with a single psychiatric diagnosis. The most frequent psychiatric comorbidities involved substance use disorders (SUDs).

Conclusions: Psychiatric disorders are underdiagnosed among ED patients. We believe that this underdiagnosis may be partly responsible for the high hospitalisation rates of ED patients with SUDs

Few emergency department (ED) studies have examined how psychiatric comorbidity, (defined in this study as two or more psychiatric diagnoses) relates to hospitalisation decisions. Compared with patients with a single psychiatric diagnosis, patients with psychiatric comorbidities experience increased healthcare utilisation and costs and pose significant healthcare challenges.¹⁻¹¹

METHODS

The 2004 National Hospital Ambulatory Medical Care Survey (NHAMCS)¹² is a four stage probability survey of more than 37 000 patients from 376 EDs in the USA. Each hospital was randomly assigned a 4 week data collection period in 2002. As the vast majority of these EDs were not psychiatric EDs, almost all of the psychiatric diagnosing was performed by ED physicians. All patient data were coded using the ICD-9. The data collected included the first three ICD-9 diagnoses. The institutional review board of Louisiana State University Medical School in New Orleans, LA, exempted this study from formal review.

RESULTS

The results are estimated annual rates based on the application of weighting, cluster, and strata variables provided by NHAMCS. The mean patient age was 35.56 (SE for all population estimates are available from the authors). The majority of patients were either white (75.23%) or African American (21.68%). Male patients composed 43.85% of the sample.

The percentage of patients over 14 years of age receiving at least one psychiatric diagnosis was 6.38%. Only 35 patients (0.12%) were referred specifically for psychiatric screening (derived from V codes 70.1, 70.2, and 71.00-71.09) and 16 (45.71%) received a psychiatric diagnosis (numbers of patients are original numbers, not estimates). The ED physicians rated as questionable just 1.02% of all psychiatric diagnoses given as the primary diagnosis.

Approximately 5.20% of patients received a single psychiatric diagnosis, 1.04% received two psychiatric diagnoses, and 0.16% received three psychiatric diagnoses (trimorbidities). Because NHAMCS recommends not analysing population

estimates if raw sample cell sizes are <30 and relative standard errors are >0.30 to ensure adequate reliability of estimates, trimorbidity, as a separate variable, was not further analysed because of its statistical unreliability.

The four most frequent psychiatric categories were: substance use disorder (SUD) (2.23%), mood disorder (1.54%), anxiety disorder (1.19%), and psychosis (0.94%). These psychiatric categories were designed to be compatible with DSM-IV categorisations. For example, bipolar disorder was included in the mood disorder category; in contrast, ICD-9 includes bipolar disorder in the psychosis category. ICD codes were: 303-305.93 for SUDs; 296-296.89, 300.4, 309-309.1 and 311 for mood disorders; 300-300.09 and 300.2-300.29 for anxiety disorders; and 290-295.95 and 297-299.91 for psychotic disorders.

Only three comorbidity pairs met the statistical reliability requirements for analysis by NHAMCS criteria as noted above. These three comorbidities, which represented 50% of all possible psychiatric comorbidities, were: (a) SUD plus psychosis (20.43%), (b) SUD plus mood disorder (11.57%), and (c) SUD plus SUD (18.04%).

More patients with one psychiatric diagnosis (26.84%) and no medical diagnosis were hospitalised than patients with one medical diagnosis and no psychiatric diagnosis (11.80%). More patients with two psychiatric diagnoses and no medical diagnoses (51.26%) were hospitalised than patients with one psychiatric diagnosis and no medical diagnoses (26.84%). Trimorbidities, because of their infrequency and statistical unreliability, were not further analysed. Although unreliable as a single category, trimorbidities can be validly added to dual diagnoses to create a comorbidity category involving two or three psychiatric diagnoses

A logistic regression was conducted using comorbidity as the covariate and disposition (hospitalisation versus discharge) as the dependent variable. Psychiatric comorbidity was a significant predictor of hospitalisation, Wald $F_{(1, 207)} = 145.83$, $p < 0.001$, (odds ratio 5.01, 95% confidence interval 3.85 to 6.52). Patients with psychiatric comorbidities

Abbreviations: ED, emergency department; NHAMCS, National Hospital Ambulatory Medical Care Survey; SUD, substance use disorder

were five times more likely of being hospitalised than patients without psychiatric comorbidities.

Among the possible comorbidity pairs involving SUD, mood, anxiety, and psychosis diagnoses, only two met the statistical reliability requirements. The hospitalisation rates for patients with SUDs and mood disorders, and for patients with SUDs and psychoses, were 70.61% and 45.92%, respectively.

DISCUSSION

The psychiatric rate of 6.38% (percentage of patients receiving at least one psychiatric diagnosis) is consistent with other similar studies¹³ and is far below the national rate in the USA of 20–30%,¹⁴ suggesting that a significant psychiatric underdiagnosis is occurring in the ED. For example, the SUD rate in the USA is about 9%,¹⁵ while in NHAMCS, the SUD rate was 2.23%. Nevertheless, within this context, the four most frequent psychiatric categories were SUD, mood, anxiety, and psychosis disorders.

Patients with psychiatric comorbidities had five times the odds of being hospitalised than patients without comorbidity. SUD, which was the most frequent psychiatric diagnosis and comorbidity, was strongly associated with hospitalisation decisions. Approximately 61% of patients with comorbid SUDs and mood disorders, and 42% of patients with comorbid SUDs and psychosis disorders were hospitalised.

This study raises two important and related questions. Firstly, why are psychiatric disorders underdiagnosed among ED patients? A recent study¹³ indicated that ED physicians focus primarily on the presenting physical complaints because they believe that mental disorders are relatively unimportant threats to health. Such a belief is not supported by research showing that mental disorders rank second only to cardiovascular disease as a cause of lost years of productive life,¹⁶ and are associated with an increased risk of premature death.¹⁷ It is worth noting that the psychiatric underdiagnosis we have observed in NHAMCS may reflect the tendencies of ED physicians to only focus on mental disorders that have reached a crisis stage.

The second and somewhat paradoxical question is: could this psychiatric underdiagnosis be partly responsible for the high hospitalisation rates of ED patients with SUDs? We believe the answer is yes, as the epidemiological statistics indicate that ED physicians often fail to diagnose (and thus refer for treatment) patients with the less severe SUDs. Left untreated, these SUDs often evolve into crises,⁶ precipitating return visits to the ED and hospitalisation. With earlier detection in the ED, we suspect that fewer of these patients would return to the ED requiring acute care.

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REFERENCES

- 1 **Roy-Byrne PP**, Stang P, Wittchen HU, *et al.* Lifetime panic-depression comorbidity in the National Comorbidity Survey. Association with symptoms, impairment, course and help-seeking. *Br J Psychiatry* 2000;**176**:229–35.
- 2 **Kessler RC**, McGonagle KA, Zhao S, *et al.* Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Arch Gen Psychiatry* 1994;**51**:8–19.
- 3 **Overbeek T**, Schruers K, Vermetten E, *et al.* Comorbidity of obsessive-compulsive disorder and depression: prevalence, symptom severity, and treatment effect. *J Clin Psychiatry* 2002;**63**:1106–12.
- 4 **Kessler RC**, DuPont RL, Berglund P, *et al.* Impairment in pure and comorbid generalized anxiety disorder and major depression at 12 months in two national surveys. *Am J Psychiatry* 1999;**156**:1915–23.
- 5 **Kessler RC**, Frank RG. The impact of psychiatric disorders on work loss days. *Psychol Med* 1997;**27**:861–73.
- 6 **Curran GM**, Sullivan G, Williams K, *et al.* Emergency department use of persons with comorbid psychiatric and substance abuse disorders. *Ann Emerg Med* 2003;**41**:659–67.
- 7 **Robins LN**, Locke BZ, Regier DA. An overview of psychiatric disorders in America: The Epidemiologic Catchment Area Study. In: Robins L, Regier D, eds. *Psychiatric disorders in America*. New York: Free Press, 1991:328–66.
- 8 **Forman EM**, Berk MS, Henriques GR, *et al.* History of multiple suicide attempts as a behavioral marker of severe psychopathology. *Am J Psychiatry* 2004;**161**:437–43.
- 9 **King RD**, Gaines LS, Lambert EW, *et al.* The co-occurrence of psychiatric and substance use diagnoses in adolescents in different service systems: frequency, recognition, cost, and outcomes. *J Behav Health Serv Res* 2000;**27**:417–30.
- 10 **Barsky AJ**, Orav EJ, Bates DW. Somatization increases medical utilization and costs independent of psychiatric and medical comorbidity. *Arch Gen Psychiatry* 2005;**62**:903–10.
- 11 **Kessler RC**, Zhao S, Katz SJ, *et al.* Past-year use of outpatient services for psychiatric problems in the National Comorbidity Survey. *Am J Psychiatry* 1999;**156**:115–23.
- 12 **McCaig LF**, Burt CW. National Hospital Ambulatory Medical Care Survey: 2002 emergency department summary. *Adv Data* 2004;**340**:1–34.
- 13 **Kunen S**, Niederhauser R, Smith PO, *et al.* Race disparities in psychiatric rates in emergency departments. *J Consult Clin Psychol* 2005;**73**:116–26.
- 14 **USDHHS**. *Mental health: A report of the Surgeon General*. Rockville, MD: National Institute of Mental Health, 1999.
- 15 **Grant BF**, Stinson FS, Dawson DA, *et al.* Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Arch Gen Psychiatry* 2004;**61**:807–16.
- 16 **Murray C**, Lopez A, eds. *The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, MA: Harvard School of Public Health, 1996.
- 17 **Harris EC**, Barraclough, B. Excess mortality of mental disorder. *Br J Psychiatry* 1998;**73**:11–53.