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A Public Health Perspective on Mental and Medical Comorbidity

Elizabeth Reisinger Walker, PhD, MPH, MAT and Benjamin G. Druss, MD, MPH

Department of Health Policy and Management, Rollins School of Public Health, Emory University, Atlanta, Georgia

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Association of Mental Disorders With Subsequent Chronic Physical Conditions: World Mental Health Surveys From 17 Countries

Kate M. Scott, MA (Clin Psych), PhD; Carmen Lim, MSc; Ali Al-Hamzawi, MD; Jordi Alonso, MD, DrPH; Ronny Bruffaerts, PhD; José Miguel Caldas-de-Almeida, MD, PhD; Silvia Florescu, MD, PhD; Giovannide Girolamo, MD; Chiyi Hu, PhD; Peter de Jonge, PhD; Norito Kawakami, MD, DMSc; Maria Elena Medina-Mora, PhD; Jacek Moskalewicz, PhD; Fernando Navarro-Mateu, MD, PhD; Siobhan O' Neill, MPsychSc, PhD; Marina Piazza, ScD, MPH; José Posada-Villa, MD; Yolanda Torres, MPH, DraHC; Ronald C. Kessler, PhD

IMPORTANCE—It is clear that mental disorders in treatment settings are associated with a higher incidence of chronic physical conditions, but whether this is true of mental disorders in the community, and how generalized (across a range of physical health outcomes) these associations are, is less clear. This information has important implications for mental health care and the primary prevention of chronic physical disease.

OBJECTIVE—To investigate associations of 16 temporally prior *DSM-IV* mental disorders with the subsequent onset or diagnosis of 10 chronic physical conditions.

DESIGN, SETTING, AND PARTICIPANTS—Eighteen face-to-face, cross-sectional household surveys of community-dwelling adults were conducted in 17 countries (47 609 individuals; 2 032 942 person-years) from January 1, 2001, to December 31, 2011. The Composite International Diagnostic Interview was used to retrospectively assess the lifetime prevalence and age at onset of *DSM-IV*-identified mental disorders. Data analysis was performed from January 3, 2012, to September 30, 2015.

MAIN OUTCOMES AND MEASURES—Lifetime history of physical conditions was ascertained via self-report of physician's diagnosis and year of onset or diagnosis. Survival analyses estimated the associations of temporally prior first onset of mental disorders with subsequent onset or diagnosis of physical conditions.

Corresponding Author: Elizabeth Reisinger Walker, PhD, MPH, MAT, Department of Health Policy and Management, Rollins School of Public Health, Emory University, 1518 Clifton Rd NE, Atlanta, GA 30322 (ereisin@emory.edu).

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RESULTS—Most associations between 16 mental disorders and subsequent onset or diagnosis of 10 physical conditions were statistically significant, with odds ratios (ORs) (95% CIs) ranging from 1.2 (1.0–1.5) to 3.6 (2.0–6.6). The associations were attenuated after adjustment for mental disorder comorbidity, but mood, anxiety, substance use, and impulse control disorders remained significantly associated with onset of between 7 and all 10 of the physical conditions (ORs [95% CIs] from 1.2 [1.1–1.3] to 2.0 [1.4–2.8]). An increasing number of mental disorders experienced over the life course was significantly associated with increasing odds of onset or diagnosis of all 10 types of physical conditions, with ORs (95% CIs) for 1 mental disorder ranging from 1.3 (1.1–1.6) to 1.8 (1.4–2.2) and ORs (95% CIs) for 5 or more mental disorders ranging from 1.9 (1.4–2.7) to 4.0 (2.5–6.5). In population-attributable risk estimates, specific mental disorders were associated with 1.5% to 13.3% of physical condition onsets.

CONCLUSIONS AND RELEVANCE—These findings suggest that mental disorders of all kinds are associated with an increased risk of onset of a wide range of chronic physical conditions. Current efforts to improve the physical health of individuals with mental disorders may be too narrowly focused on the small group with the most severe mental disorders. Interventions aimed at the primary prevention of chronic physical diseases should optimally be integrated into treatment of all mental disorders in primary and secondary care from early in the disorder course.

The increasing prevalence of chronic illnesses has been accompanied by a concomitant increase in comorbidity, the co-occurrence of 2 or more chronic health conditions. Co-occurrence of mental and general medical disorders is among the most common and disabling combinations, with approximately 30% of individuals with comorbidity having both a mental and a physical disorder.¹ Other related problems such as substance abuse disorders and social disadvantage can both contribute to comorbidity and exacerbate its effect. The high rates and burden of comorbidity highlight the need to better understand its clinical ramifications from both an individual patient and population perspective.

Scott and colleagues² reported in the February 2016 issue of *JAMA Psychiatry* an analysis from the World Mental Health survey that provides new insights about the close relationship between physical and mental disorders. The study, which involved 17 countries, 47 609 people, and 2 032 942 person-years, provides some of the best evidence available about mental and physical comorbidity as a public health concern. A consistent pattern of associations was shown between mental disorders and subsequent development of chronic physical conditions, with odds ratios ranging from 1.2 (95% CI, 1.0–1.5) to 3.6 (95% CI, 2.0–6.6). As the number of co-morbid mental disorders increased, the odds of a subsequent diagnosis of a physical condition increased in a dose-response pattern. At a population level, the authors estimated that mental disorders were associated with 1.5% to 13.3% of all general medical conditions reported by respondents.²

There are several limitations of the study, including the reliance on self-report to identify physical conditions (which may under estimate prevalence), use of across-sectional survey design (which requires respondents to accurately identify the temporal onset of conditions), lack of inclusion of psychotic conditions (which typically have even higher rates of medical comorbidity), and under representation of low-income countries (which may have different patterns of comorbidity). Nonetheless, the use of an international, community-based sample

allows for greater generalizability of the results compared with previous studies, which have mostly relied on clinical samples from higher-income countries. The magnitude and consistency of associations between physical and mental disorders suggests that comorbidity is a global concern. Future work should use longitudinal designs to better understand the time course of comorbidity, and also examine patterns of comorbidity across countries, particularly by income level.

What causes these high rates of mental and physical comorbidities? In the report by Scott et al, the temporal relationship between mental disorders and incident physical disorders suggests that mental disorders may precipitate the onset of physical conditions. Mental health disorders may cause physiological stress, which can directly result in general medical disorders,³ or they may indirectly lead to physical disorders through unhealthy habits^{3,4} or reduced access to medical services.⁴ Other studies have found that many general medical conditions are also important risk factors for mental health disorders. For example, patients with diabetes, rheumatoid arthritis, and asthma have an increased risk of developing depression.⁵ Additionally, poverty and adverse life events are risk factors for both mental and medical conditions in adults. This relationship may be mediated by biological mechanisms (eg, elevated inflammation and heightened stress response) as well as adverse health behaviors (eg, poor diet, inactivity, and substance use).^{6,7}

The growing recognition of the need to better integrate public health and clinical models for improving health has particular relevance for clinicians attending to mental and medical comorbidity.⁸ Addressing comorbidity will include population-based approaches to minimize the new onset of the conditions (primary prevention), support early detection in high-risk populations (secondary prevention), and implement effective treatment to minimize burden once conditions have developed (tertiary prevention). To prevent the onset of chronic physical conditions among people with mental disorders, clinicians can engage patients in programs, such as those focusing on physical activity, nutrition, and smoking cessation, that will allow patients to gain skills for managing their health. To address broader social factors that contribute to comorbidity, clinicians can aid patients by connecting them with resources, such as assistance with food or housing.

The elevated risk of poor physical health in patients with mental disorders, as well as the risk of mental disorders in people with chronic medical conditions, makes early detection through screening a high priority for these patients. For screening to be effective, however, it needs to be coupled with a plan for treating newly diagnosed conditions. Treatment for comorbidities should involve coordination and collaboration between clinicians to ensure high-quality care for all of the patients' conditions. Effective coordination strategies include shared patient records, communication between clinicians, and care management to follow up with patients and monitor their progress.⁹

Tertiary prevention entails minimizing disability for patients once they have developed chronic conditions. For patients with comorbidity, optimizing function and quality of life is usually a higher priority than an exclusive focus on managing symptoms and normalizing laboratory values.¹⁰ For instance, patients with depression and diabetes are typically less concerned with their HbA_{1c} levels than with their ability to maintain a job and social

relationships in the face of the burden posed by both conditions. Clinicians can initiate discussions with patients about priorities for their overall quality of life and how self-management of their conditions can support those priorities.

Comorbidity is a public health problem that demands public health solutions. The study by Scott et al suggests the need for continuing research to better disentangle the complex relationships between mental disorders, chronic physical conditions, and the common risk factors underlying both. In turn, efforts to blend public health and clinical models will be important for preventing and addressing the well-being of individuals with comorbid conditions.

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