

VIEWPOINT

Pragmatic Psychiatric Epidemiology— If You Can't Count It, It Won't Count

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Overview

In a recent Editorial in *JAMA Psychiatry*, Paulus¹ called for a greater focus on evidence-based pragmatic psychiatry (EPP).¹ Broadly defined, EPP foregrounds the needs of stakeholders and focuses on tractable research questions that are likely to result in beneficial pragmatic outcomes. Paulus has asked that we explore this topic from the perspective of psychiatric epidemiology.

Epidemiology is the study of patterns of disease in the community (including its full spectrum, not just the proportion of people with the disease who come in contact with a health care service). Epidemiology counts health-related phenomenon to map the frequency and distribution of disorders across time and space. This information can generate and answer questions related to which risk factors are linked to mental disorders and which treatments and services can influence the course of mental disorders. Within this context, what are the most important topics for psychiatric epidemiology to focus on in the years ahead? From the perspective of EPP, what do we think matters? What topics count?

The Existing Evidence

Psychiatric epidemiology has a focus on pragmatic research topics that are relevant to service providers and clinicians (eg, the prevalence of disorders, the adequate treatment of patients, and the risk factors for mental disorders). This research has often been based on comprehensive health registers (as in Nordic countries)⁵ and community-based surveys. The World Health Organization World Mental Health Surveys² have promoted and helped to standardize the collection of population-based surveys, providing an efficient platform for international epidemiological comparisons. Epidemiology has also helped align clinical services with need. For example, epidemiology has drawn attention to the need to reduce the avoidable burden of premature mortality in those with mental disorders. Here, epidemiology links with policy, political sciences, and health economics.³

Relatively simple epidemiological studies can point toward straightforward solutions that are easy to implement. For example, studies documenting increased cardiovascular mortality in schizophrenia, poorer survival after cardiovascular events, and fewer prophylactic treatments⁴ collectively suggest that part of the excess mortality might be addressed by ensuring that these patients receive better access to well-known treatments and prevention. These studies do not involve the cost and time required for randomized clinical trials, nor do they provide the same level of evidence. Rather they provide pragmatic, empirical pointers toward problems and solutions.

Epidemiology can also serve as a watchdog against possible negative consequences of changes in treat-

ment. Useful data sources range from postmarketing surveillance of adverse pharmacological effects to changes in suicide rates, readmissions, or social consequences associated with reductions in in-patient facilities. Although they only document associations, not causality, such studies may indeed provide "counts that count."

What are the key challenges and questions for psychiatric epidemiology? Psychiatric epidemiology should become more central to mental health service planning. A simple example of how epidemiology can directly feed into service practices comes from the implementation of epidemiological data in a Danish plan for suicide prevention around 1999. To provide an empirical basis for this plan in terms of vulnerable groups and periods, a national register-based study was completed.⁵ Apart from highlighting the importance of severe mental illness as a risk factor for suicide, it confirmed the extreme risk during admissions and soon after discharge. This led to recommendations for improved surveillance and other preventive measures during these periods. Suicide rates declined over the following years, and although we cannot claim that the interventions were responsible for the decline, the study of risk factors and timing of suicide informed a rational plan.

Psychiatric epidemiology has learned a great deal from the Global Burden of Disease (GBD) project. This large, international consortium, which has operated under the auspices of the Institute for Health Metrics and Evaluation at the University of Washington in Seattle, has made a major contribution with the creation and application of comparative, time-based health metrics.⁶ Counting incidence, prevalence, and case fatalities has a long tradition in public health, but the development of a metric that combines death and disability in a single term applicable to all diseases and injuries was a major breakthrough. Measurements of disability-adjusted life-years combine years of life lost, which measures premature death, with years lived with disability, which factors in the number of years lived with one or more disorders with a disability weight for each disorder. Mental disorders contribute prominently to the global burden of disease because of their early onset, high prevalence and cumulative burden of disability. As a group, they are the leading cause of disability globally⁷; this finding has raised the profile of global mental health and influenced how governments prioritize health care funding. Psychiatry now has objective estimates that we can use to advance our view that the investment in mental health care should reflect the massive burden attributable to mental disorders and the availability of cost-effective interventions that might reduce that burden.

Methods combining measures of incidence, prevalence, mortality and recovery are continually being improved, and where there are gaps in the epidemiological

landscape, reasonable assumptions can be used to impute the missing data (and allocate uncertainty intervals to these measures). Impressive interactive data visualization tools, such as GBD Compare (<https://vizhub.healthdata.org/gbd-compare/>), facilitate interrogations of data. Other websites now map the distribution of different disorders at subnational levels. In many cases, source data and methods are also freely downloadable. These tools provide a glimpse into the future. Can psychiatric epidemiology provide useful and evidence-based data visualization tools that address important questions? Can such data be democratized? Once these technologies become widely available, there will be no turning back.

Conclusions

While we have focused on near-term pragmatic outcomes, psychiatric epidemiology must continue to address much harder, far-reaching research questions. The primary prevention of mental disorders must remain the ultimate goal. However, in the meantime, we believe that psychiatric epidemiology can address the vision of EPP by developing better ways to integrate mental health-related epidemiological estimates into a coherent and comprehensive framework: one that better displays the kinetics of psychiatric epidemiology and can be readily accessed by consumers, caregivers, health agencies, researchers and the general community.

ARTICLE INFORMATION

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REFERENCES

1. Paulus MP. Evidence-based pragmatic psychiatry—a call to action. *JAMA Psychiatry*. 2017;74(12):1185-1186.
2. Kessler RC, Haro JM, Heeringa SG, Pennell BE, Üstün TB. The World Health Organization world mental health survey initiative. *Epidemiol Psychiatr Soc*. 2006;15(3):161-166.
3. Suetani S, Whiteford HA, McGrath JJ. An urgent call to address the deadly consequences of serious mental disorders. *JAMA Psychiatry*. 2015;72(12):1166-1167.
4. Laursen TM, Nordentoft M, Mortensen PB. Excess early mortality in schizophrenia. *Annu Rev Clin Psychol*. 2014;10:425-448.
5. Mortensen PB, Agerbo E, Erikson T, Qin P, Westergaard-Nielsen N. Psychiatric illness and risk factors for suicide in Denmark. *Lancet*. 2000;355(9197):9-12.
6. Murray CJ, Lopez AD, Black R, et al. Global burden of disease 2005: call for collaborators. *Lancet*. 2007;370(9582):109-110.
7. Whiteford HA, Degenhardt L, Rehm J, et al. Global Burden of Disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. *Lancet*. 2013;382(9904):1575-1586.