

Short Note on Behavioural Epidemiology

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Psychiatric epidemiology is a branch of epidemiology that looks into the causes (aetiology) of mental problems in society, as well as the conceptualization and prevalence of mental illness. It is a subfield of epidemiology in general. It has its origins in early twentieth-century sociological studies. While social exposures are still researched extensively in psychiatric epidemiology, the subject has subsequently grown to include the investigation of a wide range of environmental risk factors, including important life events and genetic exposures. Neuroscientific techniques such as MRI are increasingly being employed to investigate the mechanisms underlying how risk factors may affect psychological difficulties and the neuroanatomical substrate underpinning psychiatric diseases [1].

History

Early twentieth-century sociological research can be considered forerunners of today's psychiatric epidemiology [2]. This research looked into how suicide rates differed between Protestant and Catholic countries, as well as how the chance of developing schizophrenia is higher in areas with high degrees of social isolation. Researchers began utilising community surveys to diagnose psychiatric issues after World War II [3]. By the 1980s, the DSM-3 had established a trend of measuring the frequency of mental disorders alongside symptoms, thanks to the introduction of new diagnostic assessment instruments and accurate criteria for mental diseases.

For example, Lee Robins and Darrel A. Regier conducted the Epidemiological Catchment Area Project, which examined samples of the general public at five locations across America in order to determine the prevalence of mental illness in the United States. According to the survey, over a third of all Americans will experience mental illness at some point in their lives. The term "lifetime prevalence" is sometimes used to describe this figure.

Rather than simply estimating prevalence, epidemiological studies now focus on the aetiology of mental disorders, that is, the identification and quantification of factors underlying psychiatric issues and their mechanisms [4]. Because it is not ethical to expose study participants to stressors suspected of causing psychiatric diseases in an experimental setting, epidemiological techniques must be used to investigate the aetiology. Longitudinal studies, which follow children and adults over a long period of time, often years, are particularly beneficial for this purpose. These allow researchers to look at how naturally occurring exposures effect changes in psychiatric symptoms. The Dunedin Multidisciplinary Health and Development Study and the Christchurch Health and Development Study are two historical studies that focus on aetiology [5]. The impact of prenatal difficulties, genetic variations, sexual abuse, and other hazardous exposures on psychiatric problems in childhood and later in adulthood was explored in these researches, which began in the 1970s.

Disorders are assessed

In epidemiological research, a variety of methods are used to assess mental diseases, depending on the age of the participants, available resources, and other factors. Structured interviewing, a technique in which interviewers ask a series of questions to evaluate if a person is

disordered or not, is frequently used in studies with adolescents and adults. Alternatively, a questionnaire is employed, which is easier to conduct. Psychopathology is frequently assessed using parent report in epidemiological research including children; however, multi-informant techniques, such as employing parent, teacher, and self-report simultaneously, are also common [5].

Exposures that were investigated

Genetic

According to twin research, psychiatric diseases have a high heritability. A meta-analysis of the majority of twin research indicated that psychiatric diseases have a combined heritability of 46% [6]. Given the significant impact of genetic variations on psychiatric diseases, psychiatric genetics is a key subject of psychiatric epidemiology. In psychiatric epidemiology, a mix of familial and molecular investigations is utilised to discover the influence of heredity on mental health. Twin studies evaluate the impacts of all genetic variants and effects, but they are limited in describing the precise genetic pathways and architecture underpinning psychiatric symptoms since they rely solely on relatedness information. Molecular investigations, for example, estimating the total contribution of common genetic variants, validate findings from family studies that genetic variants can partially explain the prevalence of psychological issues [7, 8]. Furthermore, in big genome-wide association studies, a growing number of unique genetic loci are being linked to psychiatric diseases [9, 10].

Environmental

A wide range of environmental exposures, including nutrition, [citation needed], urbanization, [11] stressful life events [12] and bullying, are being examined in addition to genetic exposures. [Requires citation] In contrast to genetic studies, environmental studies of psychiatric issues must address the issue of bidirectional causality. For instance, both directions of causality are possible: social stress may cause depression, while depression may damage interpersonal connections and hence generate social stress (or it may even be the case that both interact, possibly as a self-reinforcing feedback loop). Either or both conditions could lead to the discovery of a link between the incidence of an environmental exposure and the development of a disorder. In psychiatric epidemiology, there are a variety of methods for determining causality. One option is to take several measurements of the exposure and consequence. Researchers can then determine how

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much of a change in mental symptoms may be ascribed to previous symptom levels, as well as if changes in exposure can be predicted by previous symptom levels (cross-lagged model). Internalizing and externalising psychological issues, as well as stressful life situations, have all been studied using this approach [13]. Multiple times during grades 7,8,9,10, and 12, both psychiatric disorders and life events were measured. Stressful life experiences appear to precede both internalising and externalising psychological disorders, according to the researchers, but they also appear to be the result of experiencing such symptoms. Twin studies provide an alternative option since discordance between monozygotic twins shows environmental impacts [6].

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Conflict of Interest

None

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