International Journal of Epidemiology, 2014, i6–i18
doi: 10.1093/ije/dyu125
Advance Access Publication Date: 16 July 2014
Original article

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The World Health Organization and the contested beginnings of psychiatric epidemiology as an international discipline: one rope, many strands

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Accepted 3 June 2014

Abstract

This paper focuses on the relatively late emergence of psychiatric epidemiology as an international discipline, through local-global exchanges during the first 15 years of the World Health Organization (WHO). Building an epidemiological canon within WHO's Mental Health Programme faced numerous obstacles. First, an idealist notion of mental health inherent in WHO's own definition of health contributed to tensions around the object of psychiatric epidemiology. Second, the transfer of methods from medical epidemiology to research on mental disorders required mobilizing conceptual justifications, including a 'contagion argument'. Third, epidemiological research at WHO was stymied by other public health needs, resource scarcity and cultural barriers. This history partly recapitulates the development of psychiatric epidemiology in North America and Europe, but is also shaped by concerns in the developing world, translated through first-world 'experts'. Resolving the tensions arising from these obstacles allowed WHO to establish its international schizophrenia research, which in turn provided proof of concept for psychiatric epidemiology in the place of scepticism within and without psychiatry.

Key words: World Health Organization, history of psychiatric epidemiology, mental health, psychiatry, international schizophrenia studies

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Key Messages

- An idealist notion of mental health focused on social ills along with resource scarcity for developing countries and a comparative disregard for mental health within the WHO, hindered its early development of an international psychiatric epidemiology.
- By the end of the 1950s, mostly US and European funding and consultants established the basis for a psychiatric epidemiological canon at WHO, supported by a contagion thesis about mental disorders and awareness of the shift in locus and modality of mental health treatment and the challenge of classification and measurement of mental disorders.
- Subsequent WHO international schizophrenia studies provided proof of concept for an international psychiatric epidemiology and the universality of certain mental disorders in the absence of biomarkers or external validators.
- A fuller history of international psychiatric epidemiology will require examining epidemiology endeavours—and their forerunners—beyond the US, UK and Northern Europe, and their linkages with WHO.

Introduction

Compared with general epidemiology, modern psychiatric epidemiology only belatedly consolidated as a discipline, despite early pioneering of proto-epidemiological concepts and methods.[1] In the latter 19th century, Sir Arthur Mitchell explored the representativeness of samples and cohorts and recognized the importance of community care for the insane, in Scotland and England.[2,3] Nineteenth-century psychiatrists in the USA routinely collected asylum statistics and addressed the problem of classification. The best known among them, Edward Jarvis, sought to explain the increase of the institutionalized mentally ill by factors like social class and 'race', though some historians now consider his conclusions to be 'in some respects independent of the data'.[4] Beyond the metropolises, colonial-era physicians and anthropologists explored psychosis and culturally-specific mental illnesses. Notably, Emil Kraepelin tested his ideas about dementia praecox by comparing European and indigenous patients at the Buitenzorg Mental Hospital, in Java, in 1904.[5] He viewed cultural differences as reflections of biological differences rather than social context, and his advocacy of biological theories of mental disorder were implicated in the eugenic policies that led to Nazi genocides.[6] But, although his and other early cross-cultural approaches used asylum statistics to infer about rates of mental illness, as did mid to late 19th-century psychiatrists, they were not yet epidemiological.

In fact, the conceptual foundations for an epidemiology of mental disease in Europe and the USA date only from the 1920s,[4,7] from when psychiatrists and, later, sociologists began collaborating on community studies of mental disorder and migration, occupation, socio-economic change, urban alienation and social disorganization,[8] and, genetic risk. By 1935, the first US National Health Survey was collecting data on mental illness as a chronic disability.[9]

This paper focuses on the later and still unwritten history of psychiatric epidemiology as an international discipline and its post-war emergence at the World Health Organization (WHO). As is now widely known, the preamble of the Organization's constitution, signed in 1946, incorporated 'mental health' into its definition of health.[10] The preamble states that: 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. Health is also deemed a basic right, regardless of religion, creed, political opinions or social or economic position. However, the recent historical and institutional literature on WHO barely mentions mental health within the Organization and omits all reference to its role in developing international psychiatric epidemiology.[11,12]

Drawing on scientific publications, archives and reports of WHO's Expert Committees on Mental Health, this paper traces the origins of and tensions around an international psychiatric epidemiology in WHO's first three decades. First, it discusses problems arising from the broad definitions of mental health in the early years of WHO and the subsequent consolidation of the mental section for adult mental health. It highlights the competition between WHO research objectives on mental disorders and practical public health concerns in the face of scarce resources, cultural barriers and a prejudicial disregard for mental disorders. Next, the paper turns to the technical expertise brought into the Organization to develop an epidemiological canon for mental health research and its relation to developments outside the Organization. In the midst of controversy over the possibility or desirability of psychiatric epidemiology, proponents used contagion theories to draw parallels between mental illness and somatic diseases, thereby justifying the applicability of epidemiology to mental categories. In a second phase, a veritable programme of

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mental health research within WHO was made possible only by recognizing the specific nature of rapidly changing psychiatric treatment, by abandoning a certain cultural relativism, and above all by acknowledging the methodological problems posed by the specificity of psychiatric epidemiology. The paper then illustrates how in a third phase, proof of concept for an international psychiatric epidemiology was generated through the alignment of sometimes divergent interests that resulted in WHO's international schizophrenia studies.

Mental health at WHO's beginnings

Brock Chisholm and the WFMH

The definition of mental health incorporated by the UN Economic and Social Council Committee into the WHO constitution has been attributed to the Canadian psychiatrist, G Brock Chisholm, who was a member of the interim committee and became WHO's first Director General. According to its constitution, which entered into force in 1948, WHO must favour all activities in the field of mental hygiene, notably those related to the establishment of harmonious relationships between men. But although it stipulates the prevention and control of disease, and not simply the promotion of health, mental illness and disorders are not mentioned.[10]

This simultaneous move to include mental health while omitting mental disease can be traced to the influence of a post-war peace ethos of mental hygiene, promoted by Chisholm. A senior military psychiatrist, he emerged from World War II a pacifist, appalled by the technological capacity of 'destroying the race'[13] and convinced that the causes of wars lay in collective neurosis. He espoused the 'family of man' and supported a worldwide positive mental health, or well-being in the absence of neurotic behaviour—a somewhat ambiguous concept of mental health.[14] Mental health could reduce international tensions, and psychiatrists and psychologists needed to work toward that goal, in communities and in industry.[15,16] Only human sciences and psychiatry could decide the future of the human race.

Chisholm worked closely with the International Congress for Mental Hygiene (ICMH), an outgrowth of the International Committee for Mental Hygiene, founded in the USA in 1919. Shortly after WHO approved its constitution, Chisholm and other psychiatrists convinced ICMH to become an international non-governmental organization (NGO). Hence, the World Federation for Mental Health (WFMH) was founded at the ICMH's first post-war Congress (1948), organized largely to address WHO's inclusion of mental health in its Constitution.[17] With 2700 participants and 27 nations represented, the Congress drafted a mission statement to promote mental health around the world and apply mental health knowledge to peace, building on the lessons of World War II. Chisholm attended, brought the Congress' recommendations back to the WHO Executive Committee and later submitted them to the second World Health Assembly (1949).[13] Chisholm publicly gave assurance that only the WFMH could bring the technical authority and international experience necessary for WHO to meet its obligations in mental and social health. WFMH subsequently became the first international mental health NGO, and the first NGO ever, to be admitted into official relationship with WHO and the United Nations Educational, Scientific and Cultural Organization (UNESCO).[18] WHO's mental health programme benefited from WFMH exchanges with Chisholm,[15] though their notion of mental hygiene, with its emphasis on human relations and an 'emotional relationship between the people of the world', would slow the reception of psychiatric epidemiology within WHO.

The WHO Expert Committee on Mental Health

In 1949, WHO established a Mental Health Section, which convened the following year. The WHO Expert Committee on Mental Health (hereafter the Committee), established to assist and advise on developing WHO's mental health programme, met almost yearly from 1949 on, with North American and European psychiatrists overrepresented.[19] Turnover was frequent, and numerous short-term consultants and work groups functioned between meetings. They equated mental health problems with epidemics of somatic disease, but targeted social ills with mental or emotional causes, and not mental or emotional states.[20] During its first 15 years, the Expert Committee addressed issues mandated by the General Assembly, including training, psychiatric hospitals, community mental health and legislation, summarized in Technical Reports.

In its first decade, the Committee ranked aetiology and treatment of specific psychiatric disorders at the bottom of its research objectives.[21] Inadequate resources for the data collection crucial to mental health programmes were a recurrent concern which governments, experts and WFMH's President brought to Chisholm early on.[22] Although the Committee suggested in 1951 that many concepts and methods used in studying communicable disease could be applied to 'what might be called the epidemiology of mental disorders',[23] not until its Eighth Annual Technical Report, in WHO's second decade, did they focus wholly on epidemiology.

Three sets of obstacles stood in the way of doing so earlier. First, a particular ideological construct of mental health initially overrode the Committee's interest in mental

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disorders research. The Committee defined mental health as the individual's capacity to 'form harmonious relations with others' and channel aggression. In fact, ultimately the Committee's interpretation of mental health and its accompanying practices and techniques, or mental hygiene, differed from earlier and later notions of mental health that focused on individual well-being, capacity for self-realization, self-esteem, adaptation, resilience and other traits that sociologists have associated with the American middle class ethos.[24,25] In veiled reference to civilian acceptance of occupation and atrocities in World War II, the Committee judged that 'to adapt to any and every environment' was not a sign of mental health. Rather, the 'healthy response' would be to try changing that environment.[23] Thus the Committee's definition did not allow the inference of psychopathology from poor mental health, unlike post-war American epidemiological studies that inferred diagnoses of mental illness from results obtained with community screening scales,[26–28] a method later criticized for its inability to adequately establish 'cases' of mental illness.

The critical ecological perspective voiced within WHO, and informed by human sciences and the applied field of intergroup relations, was far from universally accepted among psychiatrists outside the Organization. Brock Chisholm himself met criticism from American Psychiatric Association members when he presented his pacifist proposal for mental health.[15] At the World Psychiatric Association, one British psychiatrist pleaded that mental health ideology threatened reason itself and psychiatrists should be curing the patients filling hospitals before trying to cure the world.[29]

A second obstacle further postponed the WHO programme's research objectives by prioritizing mental health practice. For one thing, given the economic impossibility of providing psychiatric treatment for all in the foreseeable future, especially in the many countries without mental hospitals or psychiatrists, the Committee preferred that intergovernmental efforts focus on 'the preventive or protective application of psychiatric knowledge' through public health work.[18] The first two Committee reports recommended that mental hygiene workers and public health officers target environmental obstacles to mental health. They projected a common post-war image of society as a therapeutic community[30] in which every individual or group, mental health workers included, would be subjected to public hygiene interventions based on knowledge of inter-group relations—a perspective in keeping with the pacifist agenda.

Third, despite embracing an ideological notion of mental health far removed from concerns with psychopathology, the Committee recognized that planning for psychiatric care and psychiatric hospital reform required knowledge of psychiatric morbidity, as measured by consistent definitions of and reporting procedures for mental disorder. Although the International Statistical Classification of Diseases (ICD) issued by WHO in 1948 contained a section on psychiatry, member nations rarely used it even by the end of the 1950s.[31] Whereas some wealthy countries were already inferring mental disorder rates from community surveys, arguing that true incidence required measures of untreated cases in the community as well as cases treated in hospital, the Committee noted that, in most of the world, incidence would have to be estimated from commitment procedures or certificates. The Committee's Third Report concluded that the epidemiological approach to psychiatric disorders 'has hitherto been almost completely neglected'.[32]

Finally, the Committee considered that an epidemiology of morbidity would face obstacles in 'underdeveloped' countries from more than lack of psychiatric and statistical resources. 'Tribal Africa' was singled out for its absence of modern notions of health and illness necessary to psychiatric treatment. This last view stemmed from a report that WHO commissioned in 1952 from JC Carothers, a colonial psychiatrist with two decades of experience in Kenya.[33] His survey of mental health problems sought racialist explanations for African intellectual and cultural inferiority in brain morphology, personality, child-rearing patterns and morality. As might be expected, it met broad criticism from anthropologists outside WHO (albeit praise from anthropologist and WHO consultant Margaret Mead[34]), but the Committee's Report remained neutral. Nevertheless, WHO's Mental Health Section raised the question of how to include Africa in future epidemiological studies.[35]

From childhood and developmental disabilities to adult mental health

In the early years of the Expert Committees, they narrowed their concern with 'mental health' and 'mental hygiene' for all practical purposes to solely adults. WHO commissioned from British psychiatrist and psychoanalyst, John Bowlby, a study of mental health problems among post-war homeless children. Bowlby reviewed the literature relevant to his hypothesis that separation experiences were pathogenic, and he interviewed numerous experts. The result, *Maternal Care and Mental Health*, translated into 14 languages and widely disseminated by WHO, marked the shift in Bowlby's attachment theory from psychoanalysis to ethology.[36] The Expert Committee on Mental Health remarked on this achievement, which later impacted on psychiatric epidemiology indirectly through the research of influential

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figures such as child psychiatrist Michael Rutter, and from the 1980s on as a foundation for the social support hypothesis.[37] But Bowlby's WHO-supported research itself was not epidemiological.

In fact, childhood disorders, including juvenile epilepsy and developmental disorders, disappeared from the Expert Committee's centre of interest. One reason may have been the shared view that, in most of Europe, interest in and knowledge of epilepsy was at best fragmentary, despite major advances in the understanding and treatment of the condition. WHO established an independent study group on juvenile epilepsy, focused on services and treatment.[38] WHO later proposed pilot studies on the epidemiology of epilepsy and related disorders, in collaboration with the World Federation of Neurology and the International League against Epilepsy but independently of the Expert Committee on Mental Health.[39]

Neither did the Expert Committee include research proposals on developmental disorders such as 'mental deficiency', perhaps because of the belated scientific attention given to this area outside WHO. For example, the hypothesized association of Down syndrome with a chromosomal abnormality—one of several possible aetiological paths considered at the time—was identified only in 1959,[40] the year of the First International Conference on the Scientific Study of Mental Deficiency, in London.[41] Only in the 1970s would WHO take on epilepsy again, as a priority condition for mental health in primary care. The epilepsy programme later became part of biological psychiatry and neurosciences. According to the former Chief of WHO's Mental Health Unit, later an Office, the mental health staff were few and could not cover all areas. Decisions about which conditions to prioritize depended to a certain extent on opportunities outside WHO and on staff interest.[42]

Towards an epidemiological canon

The shift from mental health to mental disorders

Only from around 1957 on did WHO clearly shift focus from an idealistic notion of mental health towards a research programme on mental illness, from symptoms and positive well-being to discrete pathological entities. Pertinent to psychiatric epidemiology's delayed arrival is the status of the discipline in specific countries at the time. In fact, few post-war psychiatrists recognised any usefulness of epidemiological methods to their discipline, and some even contested it, as did members of the World Psychiatric Association (WPA). Founded in 1949, WPA had voted to establish formal relationships with WHO and UNESCO following WFMH's example but, being a professional group and not NGO, it failed to do so.[29] WPA federated psychiatrists from the areas of psychoanalysis, existential phenomenology, social psychiatry, genetics and biopsychosocial approaches. At its first Congress in 1950, tensions arose over mental health statistics. Some psychiatrists opposed their use, arguing that too little was known yet about the pathological processes of the neuroses and psychoses to justify statistical approaches; others heralded the knowledge derivable from 'large statistical studies, tedious though they may seem'.[29] The only epidemiological studies presented at the Congress sought knowledge about the genetics of mental disorder and insanity. Interest in statistics was further dampened by the eugenic spectre that hung over this Congress, only 5 years after the Holocaust and the Nazi murder of psychiatric patients. A paper by the psychiatric geneticist Franz Kallman, who pioneered twin studies for assessing environmental and hereditary contributions to psychopathology, created an uproar. Kallman's family, having Jewish roots, had fled Germany in 1933, but Kallman wholeheartedly approved of the Nazi eugenic policies. The other psychiatric geneticists at WPA supported Kallman's research but refused to enter the debate, which proved so virulently emotional that the session chair deliberately omitted it from the proceedings.[29]

In the UK and the USA, the sources of many WHO mental health experts, epidemiological methods in psychiatry were developing but still nascent as a consolidated field.[43] The Medical Research Council (MRC) did not yet possess an epidemiology of mental disorders programme. But British psychiatrists and researchers had addressed the mental health impact of World War II on civilian[44]and military populations.[45] Pre-World War II social medicine and social ecology-influenced post-war psychiatrists like Michael Shepherd, who trained with AB Hill, went on to found British epidemiological psychiatry and mentor its major researchers, many of whom would benefit from WHO scholarships once international psychiatric epidemiology took hold.[46] British psychiatrists and sociologists were conducting prognostic studies of schizophrenia,[47] studying the effects of hospital and community services on patients[48] and the relationship of social class and social isolation on mental illness,[49,50] including replications of Faris and Dunham's well-known ecological study of schizophrenia and urban areas of Chicago.[51] Nevertheless, the appropriateness of applying epidemiology to mental disorders was questioned within British somatic medicine until the 1960s.[46] Psychiatrists themselves had to be persuaded of the usefulness of epidemiological investigation to understanding the causes of mental illness[52] and of pairing national population statistics and national health service statistics to map the ecological distribution of mental

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illness—the latter a future keystone of British psychiatric epidemiology.[31] Not until 1964 did Shepherd declare this body of diversified research extensive enough to finally warrant demarcating the boundaries of a psychiatric epidemiology.[1]

In the USA, where public health had long benefited from the collaboration between private foundations and governmental agencies, the Milbank Memorial Fund actively promoted psychiatric epidemiology. Milbank's own interest in epidemiology had been influenced indirectly by international health. For, although mental health had already been embraced by WHO, which claimed to be the first intergovernmental organization to do so,[18] it had already been taken up by the Health Organization of the League of Nations, under the directorship of Frank Boudreau. When Boudreau became Milbank's executive director (1937–61), he advocated the mental health concept and instituted psychiatric epidemiology as one of Milbank's three foci. Milbank had also sponsored mental health statistics since before World War I and actively supported the World Federation of Mental Health's predecessor, the ICMH.[53]

During the early 1950s, in consonance with the position of WHO's Expert Committee on Mental Health, Milbank's Boudreau explicitly espoused the radical vision whereby mental health promotion, implemented by mental hygiene workers and informed by the social and biological sciences, constituted the vehicle for world peace.[54] He also positioned himself as a strategist for Chisholm's larger pacifist agenda,[55] pledging to use his contacts in the US Congress[56] and the American Public Health Association[57] to influence the American Cold War political environment.

Beginning in 1949, Milbank held round tables on epidemiology and mental health, assembling social scientists, statisticians, social psychologists and psychiatrists into a critical mass of future psychiatric epidemiologists. The round table proceedings, which synthesized the major research debates and work in progress, were widely cited, including in the WHO literature. By the late 1950s, the Fund was supporting nine major studies that could be considered psychiatric epidemiology, including the Midtown and Stirling County studies, reflecting Boudreau's and others' espousal of the need to shift from asylums to communities as the proper site of inquiry.[53] The National Institute of Mental Health (NIMH), established in 1946, funded some of these studies as well as other types of psychiatric epidemiology.

By 1957, WHO's mental health programme incorporated survey techniques as a long-term objective. The Mental Health Section began informal discussions for a study of the epidemiology of mental disorders, citing the scarce knowledge about causes, forms and treatment of what the Expert Committee on Mental Health called the most intractable problem of mental disorders: schizophrenia.[18] WHO commissioned the physician and epidemiologist DD Reid of the London School of Hygiene and Tropical Medicine, the academic centre of British epidemiology, to prepare a technical report on the epidemiology of mental disorders. Like Shepherd, Reid had been mentored by AB Hill. Although not a psychiatrist, he had benefited from the 'experiments of opportunity', or 'natural conditions of stress', presented by World War II. His study of nervous breakdown in RAF aviators supported the thesis that pre-morbid constitution, not combat conditions, were at cause.[45] WHO also solicited Milbank's Ernest Gruenberg, the first US psychiatrist to complete a degree in epidemiology, and Dr Jan A Böök, a Swedish psychiatrist, to collaborate with Reid.[58] The three consultants identified two major goals: epidemiological studies on the distribution of mental disorders for use in service planning, and studies of causation and prevention. Reid outlined a future canon based on a critical literature review, whereas Gruenberg elaborated on small-scale retrospective and prospective control studies and Böök on large-scale prevalence and family studies.[59]

That year, WHO also convened outside experts to a Study Group on Schizophrenia, declaring the disease a public health problem 'of the first order' and reviewing new findings that might answer the question of whether its 'outbreak' and the 'permanent disablement of schizophrenics' could be prevented or reduced.[59] Among the types of research necessary to filling in the knowledge gaps, the Study Group identified epidemiology.

The Reid consultation had recommended technical conferences to broaden expertise. These were subsequently held, attended primarily by British, American and Northern European experts, with discussion of Reid's draft a major objective. WFMH, Milbank and MRC sponsored the first meeting in London, in September 1958. The WHO staff and consultants then met the following year in New York, under the auspices of the American Psychopathological Association with NIMH aid.

Following these preparations, the Expert Committee on Mental Health announced at its Eighth Meeting (1959) that 'it seemed time to pay attention to what is nowadays called the "epidemiology" of mental disorders'. Reid's WHO report[60] provided the basis for this eighth meeting and was later published by Milbank. It constituted the first written contribution to what would become WHO's methodological canon for epidemiology of mental disorders,[61] breaking definitively with the idealist, collectivist and pacifist mental health approach of WHO's first decade.

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The contagion argument and other persuasions

Reid's report, published in 1969 after modifications of earlier versions, nevertheless expressed some ambivalence about whether the principles and models of medical epidemiology were applicable to the study of mental disorders. He discussed major methodological problems facing an epidemiology of mental disorders, from how to define a psychiatric case to the multifactorial nature of its aetiology. He justified the applicability of medical epidemiology to mental disorders by turning to a contagion argument for mental disorders. Against psychiatry's atomistic view of individuals as isolated from their environments, Reid declared that many mental illnesses are no less 'crowd diseases' than typhoid fever. Hence, mathematical models and other methods based on assumptions about the consequences of contact between infected sources and susceptible individuals in defined crowd or community conditions should be applicable to mental disorder. He gave the example of the dissemination of psychological disorders in human populations,[60] of which mass hysteria is a historical illustration.

American psychiatrists already working in the nascent field of psychiatric epidemiology also sought justification for applying epidemiology to the study of mental disorders, by highlighting the contagious nature of psychological phenomena. Ernest Gruenberg, Milbank's consultant to WHO and a major figure in building American psychiatric epidemiology,[62] addressed the 1956 annual WFMH meeting in Berlin on the topic 'Epidemiology of mental disorders.'[63] Like Reid, whose report cited him, Gruenberg offered historical examples of mental disorders with characteristics of herd pathology, or epidemics. But Gruenberg also introduced recent such examples: an outbreak of delusion on a Maudsley Hospital ward (London), of suicide in Paris and of hysterical paralysis and delusions of poisoning in the USA. He concluded that: 'Patterns of thinking, patterns of behaviour, attitudes and what is often called "defense mechanisms" may be transmitted through suggestion and spread through groups.'[63] In a keynote address to a WHO Inter-Regional Conference in 1960, Gruenberg included outbreaks of mental illness among the 'five problems in the epidemiology of mental disorder', which included questions raised by biological advances and the poor quality of hospital record data.[64]

In the USA, the American Medical Association, which would contribute to community mental health policy in the 1960s, also mobilized the contagion argument to promote psychiatric epidemiology, which it called the 'epidemiology of the future'. A 1959 *JAMA* editorial noted that mental illness was the only major public health problem for which reporting remained inadequate. Delineating mental illness through incidence and prevalence was necessary to avoid infection [*sic*]. Citing a recent measles outbreak, it concluded that mental illness might be as communicable as measles and that the eradication of its roots in hate and prejudice were necessary to fashioning 'the foundation for world peace'[65]—hence combining the idealist notion of mental health with an epidemiological perspective.

Reid's report, however, referenced neither the forerunners of psychiatric epidemiology brought together at the Milbank research round tables[53] nor British researchers[1] whose shared understandings of psychiatric disorder proved more sophisticated than the contagion metaphors allowed. But the very fact that contagion had to be argued to legitimize mental illness and mental health as objects for epidemiological enquiry indicates scepticism on the part of physicians and even psychiatrists to whom those arguments were directed.

Reid finally noted that whereas the emerging methods of chronic disease epidemiology apply to some mental disorders, 'this relatively novel application of epidemiological method' could only be useful if its assumptions and limitations, reviewed in the report, were recognized. Reid illustrated these limitations in the existing pioneer studies for their biases and problems of confounding. Thus, Reid's report argued for applying epidemiology to mental disorders but did not yet envision a psychiatric epidemiology, that is a reflexive discipline methodologically addressing the specificity of its object while recognizing the problem of culture-laden mental categories and the need for specific measures, such as incidence, lifetime prevalence and disability. Within the development of general epidemiology, Reid's text is situated somewhere between: pre-war, early epidemiology, with its concerns with bias and analytical methods (the beginnings of case-control studies); and post-war classic epidemiology, and its emphasis on causal inference and analytical design.[66] But as to the successful application of these epidemiological methods to mental disorders, Reid's report concluded with pessimism.

From epidemiology applied to mental disorders to psychiatric epidemiology

Reid's pessimism was not lost on the Eighth Expert Committee on Mental Health, which devoted itself entirely to the 'epidemiology of mental disorders'.[67] Yet the Committee did not wholly accept his arguments. It also embraced other priorities. For one, it maintained its earlier priorities, stating that epidemiological methods would best be applied to exploring the factors that produced mental health, rather than mental disorders. It still emphasized service administration, for which epidemiology could

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provide data on treated and untreated disease. But the Committee added that epidemiology could help clinical work 'discover those features of the habits, organization or environments of human populations' which affected onset and course of mental disorders and provided aetiological clues.[67]

Furthermore, awareness of problems with the section on mental disorders of the ICD spurred the Committee to resuscitate the thorny problem of how to measure mental disorders with precision. The Committee noted that many psychiatrists refused to generalize beyond a diagnosis applicable to the single patient, and that some countries found the section's categories culturally meaningless or too narrow. The classification system, the report stated, 'must be a servant of international communication rather than its master'.[67] Without resolving the methodological problem of measuring culturally variable and protean characteristics of mentally disturbed behaviours, the committee proposed the now familiar pyramidal structure of psychiatric classification, starting with basic symptoms (e.g. excitement, anxiety, hallucinations, intellectual dullness…), organized into syndromes and finally diagnostic entities. It finally agreed on a very broad, operational definition of mental disorder that could be used cross-culturally. Although not adopted in the end, the definition nevertheless demonstrated acute awareness of the need for uniform definitions if comparable data were to be produced in epidemiological studies worldwide. These concerns effectively paved the way for WHO's involvement in the epidemiology of mental disorders over the next two and half decades, in particular the studies on schizophrenia.[67,68]

Finally, the Committee's recommendations for research shifted away from the earlier identification of epidemiology with the public health or mental hygiene worker. It assumed that epidemiology was actually entering the field of psychiatry, though training in psychiatric epidemiology remained rare. It firmly recommended that epidemiological research be conducted by a competent psychiatrist with epidemiological training and experience. As principal investigator, this person should organize research jointly with a social anthropologist, an epidemiologist and, when possible, a biostatistician. The Committee also noted that the revision of the ICD should include psychiatrists, and not only statisticians.

The Lin-Standley Report

WHO's mental health section continued to recruit international consultants on problems of classification and psychiatric epidemiology techniques and held regional conferences concerning technical difficulties with epidemiology. Two years after Reid's report, WHO published a second contribution to its epidemiological canon, this one authored by the US- and Taiwan-trained psychiatrist, Tsung-Yi Lin, under long-term consultancy to WHO, and staff member C Standley, further solidifying the shift from mental health to mental disorders. The Lin-Standley report notes in its introduction that 'although Professor Reid enjoyed the collaboration of psychiatrists in writing [his book], it was intended as an approach to the problem of mental disorders from the general epidemiologist's point of view'.[61] Lin and Standley's monograph would instead emphasize what was specific to the use of mental health statistics for psychiatrists, health administrators and WHO. At least three aspects of their report highlighted the contrast between Reid's general epidemiology approach, for an epidemiology informed by psychiatric knowledge, and practices.

First, the authors remarked on the promising therapeutics, particularly psychotropic medication, and its implications for mental health statistics. Reid's report had omitted mention of chlorpromazine, although it had been tested in clinical trials in 1952 and was widely used by psychiatrists when his report was published. Reid also failed to note that in many countries the use of tranquillizers and recent improvements in rehabilitation were lessening the duration of hospitalization, thus diminishing the usefulness of hospital statistics which he considered the sole indices of mental illness.[61] Lin and Standley, on the other hand, discussed the implications of these advances in psychiatric care for mental health statistics. Second, whereas Reid had ignored recent mental health statistics on morbidity, Lin and Standley presented a quite comprehensive 40-year review. These studies produced wildly varying prevalence rates, but Lin and Standley, like other researchers, were acutely aware of the methodological shortcomings. Third, whereas Reid focused primarily on general epidemiology, Lin and Standley emphasized the need for prevalence and incidence formulas specifically applicable to the statistical analysis of mental disorders. Since Reid's report, an alternative to the formula used to calculate risk—Weinberg's 'morbidity risk', calculated from prevalence rates—had been severely critiqued by NIMH's principal statistician and consultant to WHO, Morton Kramer, as well as by Ernest Gruenberg. Kramer advocated using the modified life table developed by Frost.[61] This foreshadowed what for many would become psychiatric epidemiology's quest for the grail: how to measure lifetime prevalence. Like psychiatrists and statisticians in the USA and the UK who pioneered epidemiology of mental disorders,[1,69,70] Lin and Standley recognized the detection of lifetime prevalence of mental disorders to be a key problem that distinguished a psychiatric application of epidemiology from many other applications.

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In the end, Lin and Standley's report amounted to nothing less than a revolution in WHO's mental hygiene ethos. Just as two world wars had provided massive 'experiments of opportunity' for psychiatry and epidemiology—the development of screening instruments, knowledge about trauma, theories of psychosomatic disorders, and a pathogenic model of stress[63,70,71]—'underdeveloped countries' would now become laboratories for understanding the universality of mental health categories and the mental health effects of rapid social change. Unlike the colonial enterprise to capture an African mind, anthropologists, psychiatrists and physicians in the 1960s would engage in the production of what we might call 'epidemiological primitivism', searching for pristine conditions in which to understand genetic, cultural and environmental aspects of cardiovascular disease, diabetes and mental disorders. African tribes, kibbutzim, traditional societies, and rural-urban migration provided laboratories for testing theories of social causation. Standardized, culturally acceptable and comprehensive diagnoses were not only central to this enterprise but were an acknowledged necessity for the WHO Mental Health Programme, and these were developed within a series of studies on schizophrenia.[72]

The early WHO Schizophrenia Studies as proof of concept

The return to classification

Psychiatrist and anthropologist Arthur Kleinman projected the viewpoint of many post-war psychiatrists when he noted, on the occasion of Tsung-Yi Lin's death, that 'in the 1960s and 1970s the whole idea of doing epidemiology of psychiatry was *outré*, out there; it just didn't seem logical to people'.[73] Proof of concept for an international psychiatric epidemiology arose from the WHO International Pilot Study of Schizophrenia (IPSS), the very project Lin catalyzed after his report, and from the subsequent schizophrenia studies directed at WHO by Norman Sartorius. (Lin left WHO when Taiwan was expelled from the United Nations.) However, such proof required circling back to the classification questions that had long obsessed psychiatrists: what exactly is the 'mental' of 'mental illness'? Missing was knowledge of an objective substrate or biomarkers upon which diagnoses could be constructed and diagnostic validity established. But could the sources of the widespread disagreement between clinicians about what they are observing be minimized and reliability of diagnoses increased? Following the Reid and Lin-Standley epidemiology reports, the WHO Scientific Group on Mental Health ranked epidemiology as their most important mental health objective. But that objective was quickly displaced by the priority of developing an international classification of mental disorders, a glossary of terms and standardized case-finding methods, prerequisites for epidemiology itself.[74]

British psychiatrists were able to carve out a crucial role in this endeavour. Since the 1950s, many had expressed dissatisfaction with the psychiatric chapter in the Seventh Revision of the WHO International Classification of Disease (ICD). They agreed that the need for a shared diagnostic language was far more problematic for psychiatry than for any other area of morbidity. WHO commissioned the UK psychiatrist Erwin Stengel to review existing classification. Stengel reported on 28 classification systems, bemoaning the 'chaotic state' caused by the disagreement between psychiatrists over diagnoses, the difficulty posed by varying contexts in which diagnosis took place, and the multiplicity of terms used for the same symptoms.[75] During the same period, John Wing and his colleagues undertook the project of improving inter-rater reliability by developing a symptom rating scale with a precise glossary, specific interview guide and training. This resulted in the semi-structured interview schedule, the Present State Exam (PSE), succeeded two decades later by the Schedules for the Clinical Assessment of Neuropsychiatry (SCAN).[76,77]

Some British psychiatrists had observed separately that mental hospital admittance rates by age and diagnosis differed between the UK and the USA.[78] Hospital admission rates of schizophrenia were lower and admission rates of depression were higher in the UK. This led to the US/UK Diagnostic Project, which used an early version of the PSE. The study showed that US/UK differences could be explained almost entirely by 'differential prevalence of diagnostic practices and not of mental disorders',[78] reinforcing the need for precisely defined diagnostic criteria. This influenced the ICD revisions, and also the American shift from the brief descriptions and aetiological perspective of the DSM-II[79] classification system[75] to the more precise descriptive criteria of DSM-III.[80] Compared with the more highly structured, top-down interviews being developed in the USA—the Mental Status Schedule (MSS),[81] the Psychiatric Status Schedule (PSS)[82] and the Diagnostic Interview Schedule (DIS)[83]—British proponents found the PSE more comprehensive and flexible, allowing for more judgment by the interviewing psychiatrist than the American instruments. In retrospect, the PSE's backers also considered it more useful for picking up cross-cultural variation.

The IPSS used early versions of the PSE. The goal of this pilot study was to examine whether: (i) schizophrenia existed across cultures; (ii) standardized research instruments could be developed and reliably applied across

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cultural settings; and (iii) local researchers could be trained to use instruments and procedures so as to provide comparable observations. The IPSS involved in-depth interviews with 1202 patients, recruited by convenience sampling in nine countries (1968–69). It used symptoms rather than diagnostic categories as inclusion criteria so as to avoid the pitfall of variation in diagnostic labels; 2-year and 5-year follow-up studies were subsequently conducted, laying the groundwork for the Determinants of Outcome of Severe Mental Disorders (DOSMED)[84] in more cultural settings.

The best-known and most controversial result came from the follow-up studies: the tendency for patients in the three 'developing' country centres to have better outcomes on average than those in the other centres, although no single variable effectively predicted course and outcome of illness.[84] The numerous other results, published after 1980, are beyond the scope of this paper. Rather, what matters here is that the pilot study established proof of concept for an international epidemiology by showing the feasibility of studies of schizophrenia across cultural settings, of procedures for standardized and reliable follow-up evaluation of patients and of training local researchers and practitioners.

Divergent and convergent interests in the schizophrenia studies

The pilot studies can also be understood as a boundary object[85] through which different psychiatrists achieved their own goals, individually or collectively. Within WHO, the schizophrenia studies put 'mental health on the map', according to their principal director.[86] Four other effects of the studies can be considered in this light. First, use of the PSE was at that time farther along than the psychiatric classification being developed by the 'St. Louis group' and Robert Spitzer.[62] Choice of the PSE in the IPSS was also made with the 1975 revision of the ICD in mind and ultimately proved to be the forerunner of changes in the ICD mental health sections.[78] John Wing, who had mentored Norman Sartorius, and John E Cooper assured the place of the PSE in WHO's mental health concerns, although other schizophrenia study collaborators disagreed about interpretation and use of the findings to support that diagnostic perspective over alternative ones.[87] Second, the studies indirectly influenced other areas of psychiatric research. For example, NIMH, which provided most of the funding for the WHO studies, required the diagnostic developments for pharmacological research.[88] According to some researchers, the IPSS's focus on diagnosis provided a continuity in the classification of schizophrenia, from the DSM-III through DSM-V,[80,89–90] albeit indirectly, by emphasizing phenomena transversal to specific diagnoses.[91] This approach proved crucial for genetic research, for which highly refined descriptions of a broad array of phenomena are necessary. Third, although not yet epidemiological, IPSS developed an international network, literally laying the ground for future epidemiology, 'opening up the world for epidemiology to do sound work', as one observer put it. A decade of regional training throughout the world brought Western paradigms of mental disorders to other countries, and hands-on local experience with IPSS developed cadres of local researchers. Finally, the IPSS transferred knowledge in the other direction. For example, IPSS core group members became aware of the importance of social functioning by observing patients in non-Western contexts[92] and of the heterogeneity of the course of schizophrenia thanks to the outcome studies.[72]

Conclusion

The early orientations of the WHO Expert Committee on Mental Health provide a window on how global-local interactions contributed to building an international psychiatric epidemiology. They reveal how both resistance to and acceptance of a veritable psychiatric epidemiology depended on variable external influences, on the social uses to which that epidemiology could be put, as well as on conceptual developments internal to that fledgling discipline.

Epidemiology's hesitant beginnings in WHO's mental health programme are rooted in the Committee's early prioritization of mental health and mental hygiene instead of mental disorders and psychiatry. The World Federation for Mental Health, whose vision for 'curing the world' resonated with the UN's early mission of harmonious relations, successfully persuaded WHO to adapt their notion of mental health, partly through WFMH's pre-existing ties with G Brock Chisholm, WHO's first Director. Within WHO, a mental hygiene and public health agenda seemed more feasible than one built around psychiatry and its concern with mental disorders, given scarce resources and local realities of what WHO experts called the 'underdeveloped world'.

US and UK government and foundation funding, and mostly North American- and European-trained consultants, eventually introduced a methodological canon for a veritable psychiatric epidemiology of mental disorders. This took place in two overlapping phases, which partly recapitulate the development of psychiatric epidemiology within the UK and USA. The first phase, which can be called the period of 'general epidemiology applied to psychiatry', sought to justify the idea that epidemiological methods could be applicable to mental disorders. It used parallels between somatic and psychological phenomena

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and drew on the contagion argument of mental disorders. It proposed a rigorous methodology that Committee members considered unfeasible in poor countries. The second phase recognized that epidemiological research on mental disorders required knowledge about mental disorders and treatments, as well as epidemiological tools specific to psychiatry. It reprioritized the principal mental health research role, shifting it from the mental hygiene worker to the psychiatrist. It also reflected an awareness of major transformations in then-contemporary psychiatry, such as the introduction of psychotropic medication and the increase in community care. A third phase introduced questions of caseness and the search for an appropriate measure of lifetime prevalence. This marks the beginning of a veritable 'psychiatric epidemiology' at WHO.

However, given the fragile epistemological status of mental disorders, for which validity was elusive, and the tremendous practical problems facing the development of consistent categories and research on prevalence and incidence deemed necessary to psychiatric services, an international psychiatric epidemiology required proof of concept. This was generated by WHO's own schizophrenia studies, the results of which simultaneously marked WHO's own international contribution to the cumulative knowledge of psychiatric epidemiology itself.[72] At an epistemological level, the evidence that a phenomenon psychiatrists defined as schizophrenia existed in all cultural contexts reinforced the status of psychiatry as a scientific discipline within medicine, and not simply a healing art.

Further work should examine the boundary work that eventually 'sorted out' schizophrenia[85] from other severe mental illnesses, both within the schizophrenia studies and through the related classificatory work that led to the PSE and the DSM-III. This classificatory history should also be examined in relation to an emerging literature on the conceptualization of severe mental illness as a chronic disease.[93]

Whereas this paper suggests that local-global interactions shaped what would become psychiatric epidemiology at WHO, the process appears clearly Eurocentric, with the reality of other 'locals' mostly translated through Western gazes (Lin is the major exception), rather than informed by those countries themselves. The point at which psychiatric epidemiology took hold at WHO, at the beginning of the 1960s, may indeed be that where non-European and North American actors began exerting influence. Major figures, including TY Lin and the Nigerian psychiatrist, researcher and Deputy Director-General of WHO, TA Lambo, should be re-examined in this light. A missing counterpart to this story is whether local proto-psychiatric epidemiologies—or full-fledged ones—emerged in Latin America, South Africa, Asia and elsewhere during the same era, and how they are linked—or not—to the endeavour described here.

Acknowledgements

The author acknowledges the excellent contributions of Ezra Susser to the betterment of this paper, and of Sarah Conover and Steeves Demazeux to the final form. Thanks are also due to Ilana Lowy, Anne Hardy and George Weisz for their useful comments on earlier versions.

Conflict of interest: None declared.

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