

Continued Needs for Epidemiological Studies of Mental Disorders in the Community

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Introduction

Faravelli et al. [1, 2] present findings on the lifetime, point and 1-year prevalence of mental disorders from their recent Sesto Fiorentino community survey in Italy. The publication of these study findings occurs at a time where some researchers and journal editors seem to have come to the conclusion that there is currently no further need for such cross-sectional studies on the prevalence of mental disorders. In fact, there have been pleas for a pause of such studies [3]. Highlighting several noteworthy features and findings from the survey of Faravelli et al. [1, 2], this editorial will challenge this attitude. The status, past and recent progress in the field of epidemiology of mental disorders will be critically discussed, in an attempt to underline the continued core role of descriptive epidemiological studies for our field and to identify future research needs.

What Is Epidemiology?

Epidemiology can be defined as the study of the distribution and the determinants of disease frequency in humans [4–6]. Key requirements of epidemiological stud-

ies are (a) the definition of the target population under study, which can be either the total population of a region or a country or representative fractions thereof (samples), (b) explicit, reliable and valid criteria for disorders or more generally what constitutes a ‘case’ (i.e. subjects with key symptoms or syndromes, subjects with certain treatment needs), (c) explicit, reliable and valid criteria for variables and factors that might be associated with a disease (i.e. gender, social class, genetic factors, infectious agents) to identify correlates, potential risk and protective factors, and (d) use of epidemiological methods for measuring outcome occurrence (incidence and prevalence rates in specified time frames, such as lifetime, 30 days or 1 year) as well as the impact and consequences of mental disorders, such as course of illness, associated impairments and disabilities.

Epidemiology can further be divided into two interrelated orientations and methodologies, namely *descriptive epidemiology*, aiming at measuring the size and scope of mental disorders in the community or other populations (prevalence and incidence) and *analytic epidemiology*, which focuses on understanding the etiology of mental disorders, for example by including psychosocial, laboratory or genetic markers and risk factors to test etiologic hypotheses.

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Originally, in the scientific discipline of epidemiology, epidemiological methods and research designs in particular were developed to study almost exclusively infectious and a few chronic diseases. Only very slowly during the past 40 years, methods were adapted for use in the field of mental and behavioral disorders. This delay has been mostly attributed to two factors: (a) the considerable complexity of multifaceted vulnerability and risk constellations typically seen for mental disorders and (b) the controversial status of past diagnostic classification systems for what has been called 'psychiatric disorders' in the past [5, 6]. Still, the complex manifestations and courses of mental disorders and their past low diagnostic reliability were often difficult to capture in basic epidemiologic designs, involving one or two assessment points in time. In addition, risk factors for mental disorders remain to be difficult to conceptualize and to assess as outcomes.

Despite these problems that have been partly overcome in recent years, it is undisputed that epidemiology – beyond the mere political implications of describing how frequent mental disorders are in the community and how frequently they are not treated – offers some unique and most promising research strategies for describing and clarifying the nature, the etiology, the course and outcome of mental disorders. This is because patients in treatment settings, on which most research and current knowledge is based, usually represent only a small and highly selective segment of the full spectrum of mental disorders and thus, for example findings for risk factors, prognosis and etiology might be biased by selection as well as severity of the respective condition.

With the introduction of more reliable and valid classification systems for mental disorders, based on explicit criteria and operationalized diagnoses in 1980 [7, 8] and structured and standardized diagnostic assessment instruments [9] tailored accordingly, the last two decades have witnessed an unprecedented progress for epidemiological research in mental disorders in terms of number of studies, their scope, degree of methodological sophistication and their linkages to allied disciplines such as psychology, psychotherapy, neurobiology, and sociology [9]. What started in the 1950s as a scientifically problematic and quite restricted area of research in 'psychiatric epidemiology', plagued by basic conceptual problems of case definition, the establishment of stable prevalence estimates, and the preoccupation with studying social class issues and psychosocial correlates of a few disorders [10–12], has now reached firmer grounds. Within a comprehensive and broader perspective of 'epidemiology of mental disorders', important interdisciplinary contributions for a wide

er range of mental disorders emerged that are relevant not only for psychiatry, but also for the fields of neurobiology, genetics, clinical psychology, psychotherapy and psychosomatics, and public health.

Progress in Descriptive Epidemiology

The Size of the Problem: Prevalence, Age of Onset, Undertreatment

Increasingly sophisticated, large-scale studies in the general population (descriptive epidemiology) have made evident to researchers, clinicians, as well as the public that mental disorders are very frequent disorders of the brain, affecting almost every other person over his/her life course. Whereas in the 1970s and early 1980s we were concerned with unreliability of findings, manifested by tremendously large 2- to 3-fold prevalence variations for even a few broad diagnostic categories like the 'neuroses', more recent findings have provided us with fairly consistent prevalence estimates for a wide range of specific mental disorders across countries. These studies have further highlighted with increasing precision the variability in the manifestations of disorders of emotion, cognition and behavior, demonstrating that mental disorders are not as uniform as previously believed in terms of their risk factors, courses, outcomes, associated disabilities and impairments. The demonstration of disorder-specific characteristics of mental disorders has important clinical implications and matches for example evidence from clinical research in psychotherapy and neuropharmacology that, despite some common factors, successful management of patients requires disorder-specific interventions.

As an example, the International Consortium in Psychiatric Epidemiology [13] estimated on the basis of a joint reanalysis of several countries the lifetime risk for the three most common disorders (mood, anxiety and substance disorders) to range between 36.3 and 48.6% and the point (30-day) prevalence to range between 10 and 17%, in spite of design and cultural differences [14–17]. Similar relative stable estimates were found even for specific disorders, such as panic disorder (lifetime estimates of 3–4% and point prevalence estimates of 1–2%) as well as psychotic disorders (1–3%). Similar convergent evidence has also become available from these studies with regard to sociodemographic correlates, the temporal patterns in terms of onset and persistence, impairments [18] of mental disorders, the high degree of cross-sectional [19] and sequential comorbidity among various forms of

mental disorders [20], and the fairly low service utilization rates for most mental disorders, which range between 7 and 13.4% in industrial countries.

Progress in this domain is not of mere academic interest, but has also important implications for practitioners, the public, the patients and their families. Descriptive epidemiological data of this sort have helped significantly to 'demystify' mental disorders. For example, politicians, increasingly aware of the fact that almost 50% of the population suffers at least at one point in time of at least one mental disorder, have started to put mental health care and the implementation of appropriate treatment structures higher on the agenda and primary care physicians get increasingly aware of the size and scope of mental disorders in their patients, referring them more frequently to specialist treatments (psychotherapists, psychiatrists). Those suffering from mental disorders increasingly know that they are not single and rare cases suffering from untreatable 'craziness', but have specified disorders, for which various effective psychological and pharmacological treatments exist.

The Impact of Mental Disorders in Terms of Disability

Findings also make clear that mental disorders, including substance use disorders, are quite disabling conditions. Supported by a few epidemiological data, available at the time of this exercise, the Global Burden of Disease study [21] estimated, using expert ratings, that the burden associated with mental disorders has been heavily underestimated. Of the 10 leading causes of disability worldwide in 1990, measured in years lived with a disability, 5 were psychiatric conditions: unipolar depression, alcohol use, bipolar affective disorders, schizophrenia and obsessive-compulsive disorder. At the same time, it is noteworthy that the Global Burden of Disease study clearly stated that these estimates rely predominantly on fairly crude expert estimations, without sufficient support by actual data. In response to this deficit, increased national and international collaboration and the use of more stringent methodologies and designs have resulted in intensified attempts to collect more comprehensive data, allowing for coordinated cross-national reanalysis such as the ongoing World Mental Health 2000 [22]. The significance of such studies beyond the mere demonstration of the size of the problem of mental disorders has been highlighted by the Cross-National Group, which demonstrated increasing rates of depressive disorder in each successively younger birth cohort as well as declining age of first onset of depressive disorders in almost all countries examined [23]. This has prompted several studies to explore the rea-

sons for this continuing increase in depression rates and further led to a reconsideration of projections with regard to the burden of depressive disorders in the future.

The Relevance of Epidemiological Studies for Improved Classification and Instruments

Population studies and method-related epidemiological work have also been instrumental in the improvement of diagnostic classification systems for mental disorders. Reliable symptom and diagnostic assessment instruments of mental disorders have been created for use in epidemiology and clinical research, such as the Composite International Diagnostic Instrument (CIDI) [24] with its variations, gradual incorporation of findings by survey methodologists and cognitive psychologists [25, 26]. This work has not only significantly influenced the content and structure of clinical instruments such as the Structured Clinical Interview for DSM-IV [27, 28] and the Schedules for Clinical Assessment in Neuropsychiatry [29, 30], but also played an important role in the revision processes of diagnostic classification systems (DSM-IV, ICD-10 and DSM-V), resulting in further refinement of explicit diagnostic criteria and algorithms with improved reliability and a more detailed exploration of empirically based thresholds.

A Broader Understanding of the Nature of Mental Disorders – Comorbidity

Epidemiological studies have also been instrumental in highlighting the important role of comorbidity. Careful cross-sectional studies in the community have demonstrated that comorbidity is not merely an artifact or a result of help seeking, but a core characteristic of almost all mental disorders, which seems to have important nosological and clinical implications [31, 32], such as in the case of early-onset primary anxiety disorders and secondary major depression. Since the nature and the meaning of this comorbidity is yet poorly understood and conceptualized, such evidence has stimulated an increasingly complex set of studies, with the attempt to identify the implications of comorbidity for defining more appropriate thresholds and more convincing nosological models.

Unresolved Issues in Descriptive Epidemiology

Given the quite impressive list of progress, it is noteworthy though that there remains a considerable list of unresolved issues, which clearly call for continued strong efforts to conduct cross-sectional epidemiological studies

in the community. Although some reviewers [3, 33] in the field have criticized the ‘what has been labelled past preoccupation with large-scale general population studies’, it seems important to emphasize that there is poor support for the assumption that the core critical issues are resolved. In the following part, I will address some of these deficits, highlighting at the same time the degree to which Faravelli et al. [1, 2] help us to fill these gaps in knowledge.

The Need for Country-Specific Prevalence Data

To start with a more general political perspective, it is first noteworthy that politicians and health care planners will have lasting interests in continuous monitoring of the mental health state of the respective population they are responsible for. In this respect, it should be noted that actually only very few countries ever conducted and published nationwide surveys on this topic; among the few are the USA, Canada, Germany, the UK, the Netherlands, and Korea. Somehow more studies are available from circumscribed smaller areas [34–36]. Yet, one should also note that some of these studies were conducted many years ago; thus, they might neither reflect the current situation nor current provider and treatment standards; further, older data might not be up to date anymore in methodological terms (diagnostic criteria, sampling).

This concern is particularly relevant in times of changing diagnostic criteria (DSM-III to DSM-IV), changing provider models (increasing role of nondrug interventions and ambulatory treatment), changing evidence for ‘first-line treatments’ (type of medication, type of psychotherapy) and with regard to time trends, for example with regard to drug abuse (cannabis, stimulants), where rapid changes might occur even in time intervals of a few years.

In this respect, Faravelli et al. [1, 2] present for Italy the most recent prevalence and treatment data. After their landmark ‘Florence’ study in the 1980s, their novel contribution is the fourth prevalence examination for Italy. A fifth one – as part of the European ESEMED/MHEDEA trial – might become available in about a year. The particular strength of their study is that their methodology allows comparisons with previous surveys, for example to estimate stability and change of prevalence rates over time. Further, their study is among the few also informing about the treated prevalence, hospitalization rates, and therapeutic interventions. These data highlight that still after many years of attempts to increase recognition, treatment rates, and rates for appropriate treatment, rates for roughly adequate treatment remain quite low. As in

some other epidemiological studies [37, 38], the predominant provider for mental health treatment remain primary care doctors in 87% of all treated persons affected by mental disorders. This might also explain, why benzodiazepines are still the most frequent treatment applied, inspite of the fact, that this treatment is not regarded as a first-line treatment anymore for almost all diagnoses covered in this survey.

Incomplete Coverage of Disorders

A second critical deficit is that past epidemiological studies actually assessed only very few of the existing disorders codified in our classification manuals for mental disorders. Undoubtedly, there is now an impressive body of evidence on the prevalence of many threshold disorders, particularly psychotic disorders, substance use, anxiety, and affective (mood) disorders. Yet, these disorders are far from covering the full range of clinical significant psychopathological conditions.

Noteworthy deficits exist, however, for example with regard to the prevalence of threshold conditions of somatoform disorders, sleep disorders, eating disorders, substance-related disorders beyond abuse and dependence, personality disorders, and some forms of childhood disorders. Given that many of these neglected conditions are believed to be very prevalent and play a particularly important role in psychotherapy and psychosomatics and primary care, each of these conditions merits considerable epidemiological attention from a public health perspective alone. Since these disorders also have different onset and course characteristics and are frequently associated with the development of secondary comorbidities (i.e. major depression and substance dependence), they might also be promising targets for a better understanding of pathogenetic pathways involved.

Nevertheless, for example somatoform disorders (i.e. pain disorders, hypochondriasis, somatization), believed to be highly prevalent conditions, starting early in life and constituting a major burden on the health care system [39], have rarely been studied in past surveys. Similarly, sleep disorders, highly ranked as a reason for primary care consultations [40], have not been systematically studied up to now in community surveys. One might speculate that the yet unclear nosological status in classical psychiatric terms have put these two conditions low on the priority scale for large-scale population studies.

The obstacles to epidemiological research on personality disorders have been attributed to methodological reasons, namely the lack that up to now there have not been any sufficiently reliable and time-efficient assessment

tools suitable for comprehensive, epidemiological assessments.

For childhood conditions, the challenges lie in the lack of consensus and in the appropriate choice of age-/developmental-stage-specific diagnostic assessments. Researchers must also concur on the degree to which multiple sources of information (i.e., parents and teachers) can be combined into one coherent strategy that mirrors the continuity to adolescent and adult mental disorders. Indeed, despite growing collaboration, there is still a remarkable division between epidemiological designs and methods used in childhood, adolescent and adult mental disorder research. Inherent in this division is the issue of the developmental continuity of psychopathological features, which partly also touches on the ongoing controversy of dimensional versus categorical measures in epidemiological studies of mental disorders. Intensified research in this area is needed especially because of evidence that most of the adult mental disorders begin in adolescence.

The contribution of Faravelli et al. [1, 2] is noteworthy from this perspective because their study has made a serious attempt to at least fill some of these gaps. Unlike most previous surveys, their study's assessment tool allowed estimates for rates of primary sleep disorders, childhood conditions, eating disorders, somatoform and impulse-control disorders. Despite the fact that a certain note of caution is necessary with regard to the formal integrity of these diagnoses in terms of reliability and validity, these data provide a unique opportunity to describe the mental health state in the community more comprehensively than most other studies in the past. Further, these diagnostic additions open up the unique possibility to examine patterns of comorbidity more adequately.

Threshold Explorations and Subthreshold Disorders

With few, but noteworthy exceptions [41, 42], available descriptive epidemiological survey data refer to a quite restricted range of threshold DSM diagnoses, usually derived from the CIDI or similar instruments without consideration of available duration, persistence and severity information. The exclusive reliance on categorical threshold diagnoses carries substantial risks of artifactual explanations (such as in comorbidity analyses) and fails to acknowledge the possibility of a dimensional nature of most expressions of psychopathology. The DSM-IV, as the most frequently used classification system for mental disorders in research, actually makes only a few explicit attempts to derive discrete categories that are mutually exclusive and lead to a single classification of an individual. In fact, the system was intended to stimulate further

development of research on the thresholds for and boundaries between disorders [8]. However, regrettably few researchers have taken this as a starting point for detailed and systematic threshold explorations to provide such urgently needed data that would ultimately help to derive more adequate diagnostic classes and classification systems. Available data with their primary reliance on categorical diagnostic decisions are not an optimal source for modifying diagnostic systems [43].

The work by Faravelli et al. [1, 2] might ultimately be able to contribute quite valuable data to these critical issues as well. Based on a 2- or rather 3-stage epidemiological strategy, cases in their study were first evaluated with a screening tool, the Mini-International Neuropsychiatric Interview [44], and subsequently in stage 2 by the Florence Psychiatric Interview, followed by a reappraisal in selected clinical cases. The fact that this assessment strategy was applied by clinical interviewers using structured clinical interview tools allows the authors to employ a quite detailed severity model with regard to both, symptoms as well as syndromes. This quite innovative and novel complex assessment procedure will ultimately allow a series of threshold modulations. Yet, it should be noted that the two papers in this volume do not yet report any detailed data about the outcome of this interesting option.

Assessment of Disability and Need for Treatment

Over the past years, increasing recognition emerges that most diagnoses of mental disorders in themselves cannot appropriately answer questions about the need for care, service utilization, and treatment match. Such domains are thought to be largely determined by the functioning status and disability as well. Epidemiological studies from the past two decades have not provided coherent and comprehensive information about these important issues, beyond a few limited general indicators of interference (questions such as 'did this interfere with your life and activities a lot..?'). Thus, epidemiological studies at this point do not allow reliable characterizations of diagnosis-specific degrees of disability nor the associated service needs [45] that might be strongly linked to disability. It is only very recently that systematic conceptual and psychometric developmental work has been started by the WHO to design generic and diagnosis-specific assessment instrument modules to assess disability [46], and these measures might also provide a better basis for need assessment.

Although several authors [45, 46] have suggested direct links of improved disability and need measures, they have

failed to acknowledge that our current database is also largely deficient concerning matters of help seeking, patterns of service utilization, and intervention received. Questions like ‘have you talked with a doctor about a syndrome?’ fail to acknowledge the wide range of services (psychiatric, psychotherapeutic, psychosocial) and effective treatment and provision modalities available in most developed health care systems. Thus, the currently available epidemiological data are unlikely to give reliable – and, more importantly, sufficiently detailed – information about the degree of nonrecognition, treatment rates and help-seeking patterns of disorders. As a result, they are not helpful and informative enough to guide us in making improvements.

The work of Faravelli et al. [1, 2] can be expected to also make some important contributions to this important domain. Because of their use of clinical interviewers and the level of detail with regard to impairments, longitudinal course, and threshold considerations, this study can also be expected to provide improved information about the relationship of symptom and syndrome constellations with impairment and help-seeking behavior on the one hand, and the probability of receiving treatment on the other hand. Yet, it should also be recognized that threshold exploration in cross-sectional studies have serious limitations, which might only be sufficiently overcome by longitudinal designs (see below).

Unresolved Research Issues

The Need of Further Cross-Sectional Studies

The past emphasis on large-scale general population surveys seems to have led to the partly unfortunate public perception that the sole goal and past decade’s achievements of epidemiology in mental disorders is simply the derivation of population-based rates and the identification of a few sociodemographic correlates. This misconception has overlooked the numerous and considerable deficits discussed above on the one hand and the continued need and value of improved cross-sectional prevalence studies in the community on the other hand. It is certainly true, that cross-sectional studies have their limitations, and it is also evident that there is a pressing need for longitudinal studies. Yet, one should not give up one goal at the expense of the other.

Further, the exclusive reliance on longitudinal studies overlooks that each longitudinal study starts with a cross-sectional baseline survey; the better the methodology of this baseline survey is, the more likely it is that an ulti-

mate follow-up will resolve effectively the open research questions. Clearly more studies of the type of Faravelli et al. [1, 2] have completed are needed for many countries in Europe and worldwide, even more so, if they address more comprehensively than studies in the past broader clinical and public health issues along with a higher degree of psychopathological sophistication.

... and Beyond: Natural Course, Developmental Pathways, Core Psychopathological Processes

The value of such cross-sectional community studies, however, could be tremendously enhanced, if such studies continue with prospective longitudinal cohorts. Evidently, despite a slowly growing number of costly large-scale prospective-longitudinal studies [41, 47–49], our knowledge about natural course, longitudinal stability of symptoms and comorbid associations, as well as vulnerability and risk factors for the onset and persistence of mental disorders is still quite meager. For example, the ‘causal risk factor’ status [50] has not yet been established for most putative risk factors of mental disorders, and at this point it remains unclear what might be cause, consequence, or a mere correlate. Nevertheless, an increasing number of prospective-longitudinal epidemiological studies have been launched and have already or are expected to make significant contributions to nosology, by providing an increasingly sharper picture of natural course, early signs and risk factors, especially in children, adolescents, and young adults [41, 47, 48, 51, 52]. Optimally such studies should allow to link epidemiological psychopathological data directly with basic and clinical psychological and neurobiological research.

The limitations of patient and convenience samples for etiological and pathogenic research are becoming increasingly recognized. These include the risks of artifactual findings, the over- and underestimation of effects, confusion by comorbidity, and the impossibility of establishing causal risk factors for the first onset of a disorder. Prospective-longitudinal studies in representative population samples and causal-analytic designs will thus be of central importance.

Beyond etiopathogenesis, such studies are also of core importance for the identification of what we ultimately are all looking for: core psychopathological processes that might form a firmer basis for better diagnostic classifications. In this respect, Krüger’s [32] recent thought-provoking extension of an interesting data analytic approach to studying comorbidity needs mentioning. Elaborated initially with longitudinal data from the Dunedin birth cohort with 18- to 21-year-olds, he investigated the factor

structure underlying some common DSM-III-R mental disorders in the National Comorbidity Survey cross-sectional sample of 15- to 65-year-olds [18] in an effort to elucidate the broad higher-order structure of phenotypic psychopathology or 'core psychopathological processes', which themselves might be foci for research on treatment, prevention and etiology. The demonstration of the relative continuity of findings in both the Dunedin and National Comorbidity Survey samples is noteworthy and adds to the credibility and implications of his findings. His findings seem to match similar evidence from child psychiatry, psychiatric genetic and psychopharmacological research, suggesting that his model might not be phenotypic but may actually organize common psychopathological variance in terms of shared genetic epidemiology. However, given several significant limitations of this study, it is unwise and premature to draw strong and dogmatic conclusions on the basis of the current analyses [33]. But it certainly provides a stimulating example of how even reanalyses of existing data sets may contribute to our advancement of knowledge.

The Continued Search for Improved Conceptual Models of Mental Disorders

Conceptual models of mental disorders are not and have never been a paragon of elegance, nor have they resulted in sufficiently neat and crisp classification systems that match basic research findings and clinical management decision making. This certainly also applies to today's comprehensive modern classification systems, ICD-10 and DSM-IV, which use a more 'descriptive approach' with explicit criteria and specified diagnostic algorithms. The introduction of these manuals has resulted in greater diagnostic reliability and consistency in the use of diagnostic terms around the world, and has also been a key prerequisite for epidemiological progress in particular. However, there are still significant problems that are a source of significant dissatisfaction and controversy and require extensive future work, as evidenced by the core questions currently being explored in the revision processes of future ICD and DSM classifications. In the center of this agenda is the need for convincing clinical and nosological validation in terms of prognostic value and stability, family and genetic findings, and laboratory findings for almost all mental disorders [53], ultimately allowing a sharper genotypical and phenotypical classification. The ICD-10 and DSM-IV systems deliberately do not contain many mutually exclusive diagnostic categories, and they were intended to simulate inquiries into diagnostic boundaries and thresholds. These areas are

optimal targets for epidemiological research, yet few have done this systematically.

One likely reason for this deficit is the remaining lack of consensus on how to tailor appropriate psychopathological assessment instruments. Despite the substantial scientific exploration and examination that went into existing instruments like the CIDI, Structured Clinical Interview for DSM-IV and Schedules for Clinical Assessment in Neuropsychiatry, basic problems of reliability and validity inherent in mental disorder assessment remain unresolved. Unlike in the past, however, these critical issues are now themselves serious subjects of scientific research that encourage close collaborations between the designers of diagnostic manuals, clinical researchers and epidemiologists. Researchers are utilizing the tremendously rich database of psychometric evaluations that have resulted from diagnostic interview research, cognitive psychology, and survey methodologists [54]. In the center of discussion is no longer the old question of whether to use a categorical or a dimensional approach (there seems to be agreement that diagnostic interviews should offer both), but rather to what degree and for which psychological conditions 'clinical judgement and probing' should be regarded as a mandatory core element. Future methodological studies will hopefully resolve this question. Empirical evidence must also be gathered to determine in which diagnostic domains semi-structured clinical instruments are really superior to fully standardized instruments like the CIDI, which try to explicitly identify the latent variables behind the vagueness of clinical judgement. Progress in the resolution of this issue will ultimately also offer us more appropriate approaches to resolve the 'gold standard' question of the optimal strategy to validate epidemiological instruments [55, 56]. In this respect, Faravelli et al. [1, 2] have presented a stimulating example of the variability of possible approaches integrated into one, admittedly quite complex, approach.

Need Evaluation and Its Implications on Interventions in the General Population

Epidemiology has to offer unique methodologies to the complex process of need assessment and related evaluative activities [5, 6], and epidemiological data are a key prerequisite for identifying deficits and problems in health care systems, and offering guidance in service planning and resource allocation. In times of an increasing number of effective pharmacological and psychological treatments, competing provider models for mental disorders, and tighter health care budgets, epidemiology can be expected to gain further importance. But certainly the

available studies and data do not yet provide us with an appropriate level of detail for this important task [45, 57]. One noteworthy exception may be the considerable body of research in schizophrenia and the psychotic disorders [58], which are particularly disabling and chronic, but quite low in prevalence. The basic prerequisites of such more comprehensive studies seem to be in place: clearly specified disorder and/or related disability for which an effective and acceptable treatment is available or can be provided.

Nevertheless, despite the existence of many effective psychological and drug treatments shown to prevent disability, relapse, chronicity and suffering, we identified only one epidemiological study that assessed recognition and utilization issues in detail by type of diagnosis and severity [18]. In all other studies, nothing more was asked beyond whether the patient had contacted a medical doctor (or other mental health specialists). In this respect, the fairly continuous ignorance of taking into account the full range of mental health providers and in particular psychotherapeutic approaches has been particular noteworthy [57].

During the past two decades, quite comprehensive, interdisciplinary, mental health *systems of providers* have emerged in most industrialized countries. But up to now, no epidemiological survey has been able even to answer simple questions like: how many anxiety or depressive disorders were treated by psychiatrists, psychotherapists or other types of providers; how many were treated by medication or some form of psychological treatment, or how many were treated at in- or outpatient institutions. Further, although the traditionally broad clinical concept of 'neurosis' as well as oversimplified dichotomies of so-called 'minor' and 'major' mental disorders have clearly outlived its usefulness and scientific justification, some health utilization and needs surveys still rely on such diagnostic concepts. Even though the so-called 'minor' morbidities (such as somatoform and anxiety disorders) are treatable, rank among the most prevalent and persisting conditions, and cause by far the greatest financial burden of all disorders [59], many studies estimating needs for treatment and services still overemphasize the assumed 'more severe major' disorders that are of considerably lower prevalence.

Strongly related with this traditional distinction, such traditional studies also seem to favor the position that minor morbidities are perfect targets for primary care physicians, whereas only 'major mental disorders' require mental health specialist intervention. Even though the quite limited abilities of primary care physicians to recog-

nize, diagnose and treat most of the mental disorders has repeatedly been highlighted throughout the world [46], it seems that traditional psychiatric epidemiology still seems to strongly favor this model. In contrast, more comprehensive service utilization and need assessment strategies for mental health specialists regarding anxiety, somatoform and other 'minor' morbidities are evidently low on the priority list of most community surveys. It is important here to emphasize that the current attempts to link such simplified models to measures of disability, in order to improve need assessment (see above) might not solve this critical problem. Rather, I assume, it might result again in an inappropriate strong emphasis on the most severely ill, neglecting those in earlier stages of their illness process who might profit most of our modern treatment methods.

Certainly it is neither adequate nor financially feasible to equate diagnostic status directly to treatment needs, given the high prevalence of mental disorders and the considerable degree of comorbidity present among those with a particular diagnosis. Rather we should make transparent that this is rather a question of health care policy than a question of science. Further, it seems promising to start systematic testing of various competing models that already exist around the world. For example, health care systems that are neither able nor willing to offer comprehensive and highly specialized mental health care interventions for their population will probably have different priorities (i.e., 'care only for the most severe!') than comprehensive systems that might feel able to offer fairly unrestricted access to drug and psychotherapeutic treatments, even free of charge, with the ultimate hope to reduce the proportion of patients with severe complications on the long run. Similar to somatic medicine, and particular highly prevalent conditions such as hypertension, where it took many years to recognize its malignant effects on long-term course and outcome and on the pathogenesis of associated conditions like diabetes, nephropathy and cardiovascular disease, time seems to have come to test, whether early and intensive treatment of highly prevalent early-onset anxiety and somatoform might not result in a lower incidence of negative health outcomes and secondary complications, such as lower risk of major depression, suicide, chronicity and disability.

Priorities regarding assessment tools and evaluative activities will necessarily vary widely by region and systems. Some systems will primarily aim at the identification of the 'severely ill' to ensure basic care for those most disturbed and disabled, others will aim to optimize resources beyond the very ill, including prevention, early

treatment, and a much wider range of drug and behavioral treatments with established effectiveness. Some might even aim at universal primary prevention of mental disorders (i.e., reducing illness incidence), despite increasingly discouraging results of such universal prevention trials. Others will shift efforts to secondary prevention to reduce risk among those susceptible.

The challenge for epidemiology on a cross-national and international basis lies in a systematic comparison of such competing models [60]. Developing appropriate assessment instruments for use in epidemiological studies to identify advantages and disadvantages of each of these perspectives, in terms of legal, cost, comprehensiveness and effectiveness issues is a stimulating and necessary first step. Current perspectives on this issue seem to over-

emphasize two search strategies: the development of reliable and valid measures of disability [45, 46], and the search for other 'marker' variables of those in greatest need or the 'most severe'. In light of the above concerns, this perspective seems to fall too short. In search of improved approaches for comprehensive need assessment and evaluation, future epidemiological research should additionally emphasize: (a) a more comprehensive assessment of help-seeking behaviors that covers the full spectrum of professional providers in the respective country or region, (b) a wider coverage of types of interventions received, contingent on the availability of treatments in that country for that diagnosis, and (c) a detailed inquiry of perceived barriers to recognition and treatments.

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