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The strategy and policies of the WPA

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The strength of the WPA policies largely depends on the continuity and consistency of its leadership. The WPA Executive Committee in each period has its impact and imprinting on the development and promotion of the activities of the Association. Moreover, the statutes and by-laws allow the past leadership to continue giving their advice to the present leadership.

A major basis for the WPA 2002-2005 Strategic and Financial Plan has been the General Survey that the Association carried out in 2001 among its Member Societies. It has been very stimulating to find a widespread perception that the Association has made significant advances in the attainment of its objectives since the preceding General Survey three years before. Also important has been the evaluation of the 1999-2002 Strategic and Financial Plan, submitted to the General Assembly in Yokohama.

The Strategic Plan for 2002-2005 shall commit not only the Executive Committee, which is the governing body of WPA between General Assemblies, but all other components of the WPA and its Member Societies.

The broad goals of the WPA during the next three years can be listed as follows:

1. To optimize the fulfilment of the purposes of the Association, as specified in the statutes and by-laws.
2. To strengthen all Member Societies in their respective countries and support those in developing countries and regions, in collaboration with more developed Member Societies, through practice guidelines, training opportunities, and research collaboration, and the sharing of organizational experience.
3. To strengthen the WPA operational structure in terms of systematization, transparency, and participatory governance, including work towards the development of a Permanent Secretariat.
4. To promote ethics-related activities.
5. To promote the quality of care and prevention of mental disorders and the well-being of psychiatric patients.
6. To promote the professional development of young psychiatrists with their direct involvement in expanding Fellowship programs, training and research opportunities and interactional networks.
7. To improve the professional organization, scientific and educational quality, and systematic evaluation of WPA-organized meetings as well as their balanced geographic distribution.
8. To upgrade the editorial and publishing capacity of WPA to serve the needs of the Member Societies and of the international profession at large.
9. To improve international psychiatric education and training and to explore a greater role for WPA in coordinating and conducting international collaborative research.
10. To advance partnerships with other organizations on broad objectives such as educational and practice standards, epidemiological surveys, anti-stigma programs, public health promotion, and dealing with the impact of globalization on mental health.

A brief outline of specific goals to be fulfilled and presented to the General Assembly in the year 2005 will be attempted here, taking into consideration each component of the WPA.

Secretariat

The success of the activities of the WPA Secretariat clearly emerges from the results of the 2001 General Survey. We shall continue to evaluate and improve the functioning of the Secretariat. The current institutional practice has been to move the Secretariat every six years when a new Secretary General was elected, taking advantage of the home institutional resources available to such officer. However, this practice has been associated with considerable operational delays, loss of trained personnel, need to reapply for legal and tax-free status recognition, communication and mailing confusion, and an image of institutional fragility. This has led to the view that to attain institutional stability and maturity as well as to enhance its capacity and coordination on education, meetings, research and publications, WPA must start planning for a Permanent Secretariat. In line with this, the recent consultation with the WPA components showed that a large majority (82%) of the responders regarded the development of a Permanent Secretariat as very or quite important. The General Assembly in Yokohama gave the mandate to the Executive Committee for the implementation of the Permanent Secretariat starting from 2005.

Zonal structure

The Zonal Representatives will have a wide involvement in the policy and evaluation of WPA activities. Efforts to consolidate the zonal structure and intensify the continuous interaction between the Executive Committee, Zonal Representatives and Member Societies should be stimulated, especially at the regional or continental level.

Educational activities

The WPA 2002-2005 policy is to further expand the implementation, co-ordination and evaluation of WPA educational activities (e.g., through the Education Center); to further develop, implement and evaluate already existing WPA educational programs; to further develop a continuing medical education (CME) accreditation system; to develop new educational programs. This can be achieved by maintaining effective communication with the WPA components and Educational Liaison Network about their educational needs, producing CD-ROM versions of all WPA educational programs, and encouraging WPA components, especially the Sections, to develop new educational programs. It is vital to evaluate and upgrade medical student training in psychiatry, to extend and optimize psychiatric training, to regularize and enhance the system of provision of CME credits for

WPA meetings and to continue updating and upgrading *WPA Online*.

Sections activities

The WPA Sections are the scientific arm of the Association. We should further strengthen these Sections and consolidate cross-sectional collaboration, establish Sections on pertinent topics not already covered at the moment and ensure the general functioning and visibility of the Sections.

Meetings

The last three years have shown expansion of the scientific meetings of WPA. We should continue to organize World Congresses, International and Regional Congresses and Meetings, and Thematic Conferences on matters relevant to WPA purposes, to improve the quality of WPA meetings and to ensure the balanced distribution (geographically and calendar wise) of WPA Regional Meetings and Congresses, including both developed and developing countries.

Publications

There is an evolutionary revolution in the WPA publications. We should continue the present policy of publication, and expand the distribution and visibility of the official journal of the Association, *World Psychiatry*. The journal is published in three issues per year and sent free of charge to 20,000 psychiatrists of 114 different countries. These include all the officers of WPA, its member Societies and its Sections, and all the psychiatrists whose names and addresses have been provided by Member Societies and Sections. *World Psychiatry* includes special articles on recent clinical, service or research developments of special interest to psychiatrists worldwide; forums on controversial issues of clinical relevance; high-quality research reports; mental health policy papers; reports on WPA institutional programs; reports by WPA Sections and Member Societies; and news about the various initiatives of the Association.

The first four volumes of the series *"Evidence and Experience in Psychiatry"*, dealing respectively with depressive disorders, schizophrenia, dementia and obsessive-compulsive disorder, have been the second most important source of income for the WPA in the years 2000 and 2001, and have now sold out. A second updated edition of these volumes, in paperback form, will be on the market by the end of the year 2002. An Italian version of the four volumes has been already published. A Russian version of the volume on schizophrenia is in preparation. Negotiations are ongoing for the production of a Spanish edition of the four volumes. An electronic version of the volumes is also in preparation. The fifth volume of the series, dealing with bipolar disorder, has been published in May 2002: it contains 104 contributions by all the most renowned experts in the field, and will be available also in electronic form. The sixth volume of the series, dealing with eating disorders, is in preparation and will be available at the beginning of the year 2003: a Russian and a Lithuanian version of this volume have been already planned. The preparation of the seventh volume of the series, dealing with phobias, has started in June 2002. This series of books does not involve any financial burden on the WPA. A contract has been signed with Wiley, providing that the WPA receive 10% of the revenues from sales of the books and 50% of the revenues from sales of the electronic package and from the transfer of rights for translation.

The series *Images of Psychiatry* aims to provide a picture of the past and the present of psychiatry in individual countries or groups of countries, covering such issues as mental health care, psychiatric education, psychiatric research, epidemiology of psychiatric disorders, child and adolescent psychiatry and geriatric psychiatry.

Volumes on Japan, Arab countries and Poland have been already published. Volumes on German-speaking countries, Latin America, Spain, and Greece are in preparation.

Consensus and position statements

The policy is to monitor the advance of consensus statements under preparation, including new specific ethics guidelines (e.g. the rights of psychiatrists, ethics of treating subsyndromal disorders). Four new specific guidelines have been endorsed by the General Assembly in Yokohama: ethics of psychotherapy in medicine, conflict of interests in relationships with industry, conflict arising with third party payers, violating the boundaries between psychiatrists and patients). It is our strategy to encourage new proposals for consensus/position statements, especially by WPA Sections, in collaboration with other non-governmental and intergovernmental agencies.

Financial aspects

Efforts should be directed to consolidate the assets of the Association, to continue to work for transparency of the financial aspects of the Association, to continue to improve communication with Member Societies on financial matters and to explore alternative ways of fundraising. Following the recommendations of the Secretary for Finances to the Executive Committee, the WPA components will attempt to fulfill the following to improve and secure the finances of the WPA: a) set 10% aside of all income in order to create an asset base for the organization; b) establish a Permanent Secretariat to ensure administrative continuity; c) appoint a core professional congress organizer (PCO) to streamline and optimize surplus from congresses and meetings; d) look for other sources of income in addition to membership dues and congresses; e) expand the area of publications as source of income; f) finalize congress accounts no more than 6 months after closing the congress; g) continue to work for financial transparency for all components of the Association; h) increase the 13% overhead for functional services to 15% for new contracts; i) slowly increase membership dues by 10% annually for three years; j) ensure continuity in financial matters by having slowly staggered terms of the members of the Committee on Finances; k) in collaboration with the International Pharmaceutical Congress Advisory Association (IPCAA), consolidate and expand the Corporate Supporter program; l) exhibit great caution in launching activities that may require long-term financing.

Ethical standards and activities

After all Member Societies have endorsed the Madrid Declaration, we should direct our efforts to work for the visibility and implementation of ethical standards governing the psychiatric profession, for the protection of the rights of the mentally ill and for the provision of adequate services to the mentally ill.

Institutional programs

Our goals in the next three years are: a) to organize, evaluate, and adjust Institutional Programs on issues and tasks of broad and inter-sectorial scope; b) to establish task forces on issues considered of urgency and needing a time limited intensive intervention; c) to evaluate and adjust the Institutional Program on Stigma; d) to evaluate and adjust the Institutional Program to Promote the Professional Development of Young Psychiatrists; e) to continue and adjust Institutional Programs on critical developing areas such as Sub-Saharan Africa and Central Asia, and to establish and evaluate programs regarding South Asia, Central America, Eastern Europe and the Balkans; f) to implement, evaluate and upgrade the Core Curriculum for the training of psychiatrists, and monitor its implementation; g) to promote accessibility to and equity of psychiatric services across the world.

Schizophrenic autism: clinical phenomenology and pathogenetic implications

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The purpose of this contribution is to address, from a phenomenologically informed empirical perspective, the essential clinical features of the schizophrenia spectrum disorders and to suggest their potential import for pathogenetic research and clinical praxis. The very concept and the phenotypic boundaries of schizophrenia are still unclear and continue to stir up intense controversies (for a comprehensive debate, see 1). Recent worldwide attempts to establish programs for early detection and therapeutic intervention in schizophrenia have inadvertently revealed an embarrassing lacuna in the contemporary operationalist psychopathology, i.e., a lack of descriptions of subtle pathology that might be useful for early, prodromal diagnosis (2). This state of affairs is, to a non-trivial extent, caused by a dramatic simplification of psychopathology that has taken place over the last decades, now echoed by raising concerns expressed in the editorials of major journals (3-6). The operational diagnostic criteria specify in detail *what schizophrenia is not* (e.g. not an affective or organic disorder) rather than affording the psychiatrist with a solid conceptual-clinical grip of *what it is* (3). Yet, a crucial and primary component of the diagnostic validity is exactly to offer a certain conceptualization or *typification* of what a given disorder is in the first place (7), an aspect that is conspicuously absent in the contemporary nosological debates. All classic psychopathologists agreed that, diagnostically speaking, a certain characteristic *Gestalt*, irreducible to single symptoms or signs, distinguished the schizophrenia spectrum from other disorders. The terms used in this context were 'diagnosis through intuition' (8), 'atmospheric diagnosis' (9), 'Praecox Gefühl' (10), and 'diagnostic par pénétration' (11). All these terms converge in pointing to an intersubjective nature of this Gestalt. The concept of autism, introduced by Bleuler in 1911 (12), was the first thorough attempt to capture the clinical essence of schizophrenia and therefore played an important role in its definitions until the advent of the operational criteria. It will serve us as a departure in addressing the phenomenology of the trait features of the schizophrenia spectrum disorders.

HISTORICAL ORIGINS: 'WITHDRAWAL TO INNER LIFE' AND 'LOSS OF VITAL CONTACT WITH REALITY'

Bleuler defined autism as a detachment from reality associated with rich fantasy life:

"The [...] schizophrenics who have no more contact with the outside world live in a world of their own. They have encased themselves with their desires and wishes [...]; they have cut themselves off as much as possible from any contact with the external world. This detachment from reality with the relative and absolute predominance of the inner life, we term autism." (12).

Bleuler considered autism as a pathognomonic feature, specifying the extension of the spectrum concept of the time (i.e., including the schizoid and 'latent' cases). He described a rich variety of clinical manifestations of autism: poor ability to enter into contact with others, withdrawal and inaccessibility (in the extreme cases, negativism), indifference, rigid attitudes and behaviors, deranged hierarchy of values and goals, inappropriate behavior, idiosyncratic logic, and a propensity to delusional thinking. This enumeration demonstrates that autism is resilient to a simple medical definition because none of these manifestations is sufficient or necessary to diagnose autism (13). Moreover, and perhaps most importantly, the criterion 'withdrawal to fantasy life' is empirically false, if taken as a necessary one: there are seemingly extroverted schizophrenics (e.g., certain disorganized patients) as well as patients who do not have a rich fantasy life (14,15). Although Bleuler makes a gesture towards the patient's 'inner life', all clinical features are basically portrayed as '*third-person*' *phenomena*, i.e., as observable 'external' behaviors or 'signs'. In conclusion, although Bleuler undoubtedly had a profound clinical intuition of the schizophrenic trait phenomena, the conceptual resources at his disposal did not permit a clear articulation of this intuition and therefore limited its pragmatic, diagnostic utility.

Eugène Minkowski, who introduced Bleuler to the French audience, addressed autism in detail in "*La Schizophrénie*" (15), probably the

best clinical text on schizophrenia ever written. He realized, *insightfully*, that schizophrenia *does not* lend itself to a straightforward medical or common-sensical description, *which is uninformed by any overarching considerations on the nature of subjectivity and existence*. Inspired by a Bergsonian philosophical approach, he drew attention to the fact that a mental state should never be treated in isolation, because it is always *a part* expressing *the whole* from which it originates. This whole is the overall *structure of subjectivity*. Every single anomalous mental state is therefore a condensed expression of the *more basic experiential and existential alterations*, comprising, for example, changes in temporalization or alterations in the elementary relatedness to the world. Each major psychiatric syndrome, such as schizophrenia or mood disorder, is characterized by a *specific* pattern of such basic changes, which constitutes its *essence*. This essence or 'trouble générateur' (*generative disorder*) is the subtle *phenomenal core* that transpires through the symptoms, shaping them, keeping them *meaningfully interconnected*, and constraining their long-term evolution. Minkowski considered autism to be the 'trouble générateur' of schizophrenia (11,15,16). Autism is not a withdrawal to solitude (it cuts *across* the categories of extro- and introversion) or a morbid inclination to daydreaming, but a deficit in the basic, non-reflective attunement between the person and his world, i.e., a *lack* of "vital contact with reality". Minkowski defined the vital contact as an ability to "resonate with the world", to empathize with others, an ability to become affected and to act suitably, as a pre-reflective immersion in the intersubjective world: "Without being ever able to formulate it, we know what we have to do; and it is that that makes our activity infinitely malleable and human" (16). Manifestations of autism are mainly of a qualitative order, involving a peculiar distortion of the relationship of the person to himself, and of the person to the world and to his fellow men. There is a decline of the dynamic, flexible, and malleable aspects of these relations, and a corresponding predominance of the fixed, static, rational, and objectified elements. Autism is not limited to a peculiar expressivity (e.g., lack of emotional resonance) but transpires as well through *the patient's acting and attitudes*, reflecting a profoundly *changed existential pattern*. Autistic *activity* shows itself not so much through its content or purpose, but more through an inappropriate *manner* by which such content or purpose is enacted, its friction with the situational context. A famous vignette of a schizoid father, who buys, as a Christmas present for his dying daughter, a coffin, illustrates this odd friction. The act is rational from a formal-logical point of view, because a coffin is something that the daughter eventually is going to need, yet nevertheless it is bizarre by any ordinary human standard. 'Autistic attitudes' are either direct manifestations of the lack of vital contact or compensating personality traits that echo the 'trouble générateur'. They comprise 'morbid rationalism' (viewing all human moves as driven by purely logical rules), excessive preoccupations with symmetry and numerical aspects of the world ('geometrism'), excessive fantasy life, and peculiarly lifeless patterns of stereotyped regrets or moodiness. The pure form of autism ('autisme pauvre') manifests itself as sterility, lack of attunement to the world and emptiness, perhaps accompanied by a supervening morbid rationalism. As one of Minkowski's patients expressed it: "I can reason quite well, but only in the absolute, because I have lost contact with life". The 'rich' Bleulerian autism is its *secondary* form, marked by a compensatory upsurge of fantasizing activity. In summary, Minkowski arrived at a better comprehension and provided better clinical descriptions of the fundamental disorders in schizophrenia than did Bleuler, and Minkowski's influence is still perceptible in the contemporary phenomenological approach to schizophrenia (13).

CONTEMPORARY APPROACH: AUTISM AS A DISORDER OF SELF, INTENTIONALITY, AND INTERSUBJECTIVITY

In our view, based on phenomenological and empirical studies (17-20), the schizophrenic autism does not only refer to the various observable (third-person) phenomena of behavior and expression, but, as already alluded to by Minkowski, it also tells us something about the patient's own subjective experience. In fact, several dimensions of subjectivity appear to be affected in autism. There is a unique disturbance of intentionality (e.g., loss of meaning and perplexity), there is a disturbance in the realm of self (an 'unstable first-person perspective' and other anomalous self-experiences), and finally the dimension of intersubjectivity is also fundamentally impaired (disorders of social and interpersonal functioning, inappropriate behavior). These three dimensions are inseparable: *I, we, and the world* belong together (21,22) - and they are all afflicted in the schizophrenic autism.

Thus, in a detailed exploration, Blankenburg (23,24) arrives at a characterization of autism as a "crisis of common sense" or a "loss of natural evidence", where both terms transcend the inner-outer or symptom-sign dichotomy. What is at stake here is not the possession of specific beliefs about the world, nor is it a matter of a practical shrewdness. It is not a question of a sufficient stock of explicit or implicit knowledge (i.e., dispositional beliefs) that can be expressed in sentence-like (propositional) terms: e.g., "I know *that* one has to stop the car at the red light" or "I know *that* one says hello to greet the others". Rather, it is the ability to see things in the appropriate perspective, an *implicit non-conceptual grip* of the 'rules of the game', a *sense of proportion*, a taste for what is adequate and appropriate, likely and relevant. Briefly, it refers to a non-conceptual and non-reflective *indwelling* in the intersubjective world, to an automatic *pre-understanding* of the context and the background, which is a necessary condition for a fluid grasp of the significance of objects, situations, events and other people. Terms such as 'background capacities', 'skillful coping' and 'habitus' in cogni-

tive science, philosophy of mind and social anthropology all overlap, in varying degrees, with the concepts of common sense and natural evidence. Explicit deficits in social propositional knowledge, observable in the advanced stages of schizophrenia, are linked to isolation and defensive withdrawal, which are *consequences* of a 'crisis of common sense' or a 'loss of natural evidence' constituting the more primary vulnerability.

Common sense or natural evidence is constituted by three intertwined moments (i.e., non-independent parts) or aspects: a pre-reflective sense of self (*ipseity*; Latin: ipse = self, itself), a pre-reflective embededness in the world, and a pre-reflective attunement with others. We may speak of a pre-reflective self-awareness whenever we are *directly*, non-inferentially or non-reflectively conscious of our own ongoing thoughts, perceptions, feelings, or pains; these appear in a *first-personal mode of presentation* that immediately reveals them as our own, i.e., it entails a built-in self-reference. In other words, when the experience is given in a first-personal mode of presentation (to me), it is, at least tacitly, given as *my* experience and therefore counts as *a basic self-manifestation*. The pre-reflective immersion in the world is considered by phenomenology as a mode of intentionality (i.e., of the object-directedness of consciousness). Phenomenology distinguishes between a thematic or objectifying intentionality (e.g., when I am aware of *this chair*), and a non-reflective, tacit sensibility ('operative intentionality'), procuring a background texture or organization to the field of experience, and so constituting our primary *presence to the world*, upon which the explicit intentionality configures its perceptual or cognitive disclosures (e.g., seeing *this particular chair*). Finally, phenomenology makes a distinction between intersubjectivity in the sense of a thematic or explicit attempt at grasping the emotions, beliefs, experiences of another (be it through a process of mind-reading, analogical inference, or explicit simulation), and intersubjectivity in the more primordial or fundamental sense of a pre-reflective attunement with others that depends on our shared engagement in a common world (25). This *triadic autistic disturbance of natural evidence* (self-disorder, loss of meaning, lack of attunement with others) is paradigmatically exposed by Blankenburg in his case study of a young female schizophrenic patient, whose main and monotonous complaint is a lack of naturalness, 'self-evidentness' or 'self-understandability' ('Selbstverständlichkeit'):

"What is it that I really lack? Something so small, so comic, but so unique and important that you cannot live without it [...]. What I lack really is the 'natural evidence' [...]. It has simply to do with living, how to behave yourself in order not to be pushed outside society. But I cannot find the right word for that which is lacking in me [...]. *It is not knowledge, it is prior to knowledge*; it is something that every child is equipped with. It is these very simple things a human being has the need for, to carry on life, how to act, to be with other people, to know the rules of the game." [...] Another patient writes to his friend: "For your happiness, your lenience and your security, you can thank 'a something' of which you are not even conscious. This 'something' is first of all that which makes lenience possible. It provides *the first ground*" (24, italics added).

The world ceases to function as a stable background of our experience. It is no longer *pregiven* as a tacit, *unnoticed* and unquestionable foundation of experience. The patient complains of not perceiving the world and others as natural, given, and familiar. The patient finds himself in a pervasive state of perplexity. Certain perceptual disorders appear to belong to this experiential pathology (e.g., sense of unfamiliarity of the familiar, sense of being overwhelmed or captivated by perceptual details). Everything may become a matter of deliberation ("Why is the grass green; why has nature chosen this particular color?"), relating to others is felt unnatural and disfigured, requiring preparatory efforts; there is no evident and easy way to choose a dress, or to be sure of one's own opinion during a conversation or a dispute. One of our patients, a schoolteacher, reported that he was utterly incapable of spotting the moment when an innocent schoolboy play was turning into a hostile fight. This loss of meaning or grip is frequently associated with an intense hyperreflexivity, i.e., an excessive tendency to monitor, and thereby objectify, one's own experiences and actions (26):

"None of my movements come automatically to me now. I've been thinking too much about them, even walking properly, talking properly and smoking - doing anything. Before, they would be able to come automatically" (27).

Experience is more observed than it is lived. This hyperreflexive tendency can in part be interpreted as an attempt at compensation, as a (futile) attempt at restoring something that has been lost. Thus, from the patient's subjective perspective, the most prominent feature is exactly a *disturbed ipseity*, in which the sense of self no longer saturates the experience, or to put it differently, there is an increasing gap or distance between the sense of self and experiencing (see details in 20). The patient feels that a profound change is afflicting him, yet he cannot pinpoint *what exactly* is changing, because it is not *a something* that can be easily expressed in propositional terms (a fact that has important implications for the nature of the diagnostic interviewing). The phrasings of such complaints may range from a quite trivial "I don't feel myself" or "I am not myself" to "I am losing contact with myself", "I am turning inhuman" or "I am becoming a monster" (18-20). The patient may sense an 'inner void' or 'a lack of inner nucleus', which is normally constitutive of his field of awareness and crucial to its very subsistence. Some of these complaints point to the alterations in the patient's 'self-presence', as if the *luminosity* of his consciousness was somehow opaque, disturbed or diminished (the term 'luminosity' refers here to the very manifestation, welling-

up or phenomenality of consciousness). The patient does not feel being *fully awake or conscious*: "I have no consciousness", "My consciousness is not as whole as it should be", "I am half awake", "It is a continuous universal blocking" (28). This is frequently associated with a *diminished affectability* or reactivity of the self, of which anhedonia is only one particular aspect. The sense of *mineness* of experience may become subtly affected: one patient reported that his feeling of his experience *as his own experience* only "appeared a split-second delayed". Another of our patients had a peculiar feeling *as if* his self, as a point of view on the world or as a pole of experience, was somehow displaced few centimeters backwards.

The disturbances of ipseity exert profound reverberations on the sense of personal identity: they create a vacuum at the very core of one's subjectivity, that deprives the patient of reliable dispositional attitudes that normally imbue cognition and emotion with a sense of typicality and familiar direction. These disturbances constitute the foundation of the more explicit and articulated anomalies of subjective experience, such as changes in the bodily self-awareness, increasing objectivation and spatialization of introspective experience (e.g., feeling one's thoughts being located in a specific part of the head or brain), disorders in the stream of thoughts (e.g., thought interference), transitivistic experiences, and certain other phenomena often designated as the "basic symptoms" (29). The autistic disorders of meaning, self-awareness, and intersubjectivity occur in the majority of the first-onset schizophrenia spectrum cases (17). In fact, these core experiential phenomena are particularly clear in their pure form mainly in the early illness stages (20). They become increasingly infused with content, and hence integrated and transformed in the emerging psychotic symptoms (30,31). It must be clear now that although the autistic features are sometimes treated on a par with the so-called "negative symptoms", the experiential anomalies and disorders so far described cannot be adequately comprehended as *mechanic lacks* or functional fall-outs. Rather they testify to a complex and profound reorganization of subjectivity, often populated, from the patient's perspective, with quite "positive" experiential anomalies.

AUTISM AND NEURODEVELOPMENT

A phenomenologically articulated account of autism entails a clinically and theory-guided search for pathogenetic factors, a search preferentially attentive to the processes involved in the early ontogenesis of human subjectivity. In other words, a phenomenological approach calls on linking a developmental psychological perspective with current views on the neurodevelopmental origins of schizophrenia. The neurodevelopmental hypothesis (NDH) has become, for the last fifteen years, the most popular hypothesis on the etiology of schizophrenia (32). Although the NDH has many versions, it basically posits that the ill-

ness is somehow related to subtle disease processes affecting critical brain circuits during early development and reaching full-blown phenotypic consequences at adolescence and early adulthood (33). The NDH is motivated by a multitude of epidemiological findings (familial aggregation, gestational and perinatal complications), higher rates among schizophrenics of minor physical anomalies, morphological cerebral changes, evidence of developmental disorders during childhood of schizophrenics, and it is partly supported by some neuropathological findings (34).

It is, however, surprising to note how little (*if at all*) consideration is paid in the NDH literature to the wealth of empirical knowledge acquired in the last decades by developmental psychology. "As secret keepers of our origins, infants are the most basic expression of what it means to be alive as humans in this world - alive with the potential for the formidable mental growth that leads infants between birth and the second year toward sophisticated self-awareness, enculturation, and discernment of a consensual world that can be talked about and thus shared symbolically with others" (35) - issues which, as we have seen, are central in the phenomenological perspective on autism.

Empirical evidence has led developmental psychologists to abandon Piaget's famous view of babies living in 'adualistic confusion' and a similar psychoanalytic notion of the initial developmental stage as a 'normal autism', i.e., inability to discriminate between self and non-self (36,37). Rather, psychologists propose that already from birth infants have a primitive core ability to differentiate between self and non-self, and that infants are attuned to their environment from the outset (35). Yet, they all agree that the development of self-awareness from a proto-self to the 'full-blown' personal-narrative adult self (38) is a complex process, intimately linked to sensori-motor achievements and development of intersubjective ties (39-41). This research direction on the ontogenesis of subjectivity appears to us as highly and directly relevant for the issue of the formation of autistic vulnerability.

At the neuropsychological level, the development of a sense of 'self-within-an-environment' largely relies on the establishment of sensori-motor equivalencies and on intermodal perception and integration, i.e., on the ability to link and match features of the world provided by distinct perceptual channels. Integration of proprioception with vision, touch or audition is particularly important (35,40). In fact, intermodal integration has been shown to play a major role in the development of most, if not all, motor, cognitive, affective and social abilities during infancy and childhood (42). The neurophysiological and neuroanatomical support of intermodal integration is not yet fully understood. However, mechanisms of intramodal binding (i.e., merging different perceptual features within one perceptual modality into a Gestalt: e.g., linking together shape, color and motion into a percept) are better known, and can probably be generalized to intermodal integration (43,44). It is proposed that binding is based on

the synchronous and often periodic firing of neuronal assemblies (45). Empirical evidence suggests that these processes are crucially dependent on structurally intact cortico-cortical connections (46,47).

The interdependence between the developmental processes rooted in intra- and intermodal binding on the one hand, and the integrity of cortico-cortical connectivity on the other hand, bridges our conceptualization of autism and the NDH. One appealing version of the NDH favors the interpretation of schizophrenia as a condition of abnormal connectivity of cortical neurons (48). A review of the evidence for altered neuronal density in various cortical regions concludes that schizophrenia is associated with reduced neuropil, particularly in the pre-frontal cortex, but probably in other cortical regions as well (49). This reduction implies a decrease in the number or size of one or several components of the neuropil, i.e., essentially axonal and dendritic branches, spines, synaptic boutons (and glial processes), and hence of the cortico-cortical connectivity (50). Animal studies have shown that cortical connections develop through phases of exuberant growth, followed by partial regressions. Although these very complex and temporally patterned processes are heavily genetically constrained, the eventual fine-grained wiring is *epigenetically* determined through sensory-driven and endogenously generated neural activity (51). In this framework, faulty developments of connectivity may be reflected in the transient or persisting developmental aberrations that are observed during infancy and early childhood of future schizophrenics (32,33,43,52), and later, in adolescence, in the emergence of the triadic autistic vulnerability described above. Empirical evidence suggests that intramodal binding abilities might be impaired in schizophrenia (44).

PATHOGENETIC AND CLINICAL IMPLICATIONS

If, as we have proposed, the disorders in the realm of self, intentionality, and intersubjectivity are at the clinical trait core of the schizophrenia spectrum disorders, then a number of implications follow. The progressive formation of vulnerability and transition to psychosis need not be seen only as cumulative neural processes leading to a series of impairments in neurocognitive functions. Rather, autism is to be considered as a fundamental transformation of the structures of subjectivity (in all its three dimensions: subjectivity in relation to itself [*self-awareness*], in relation to the world [*intentionality*], and in relation to others [*intersubjectivity*]). This transformation constitutes the *autistic phenomenal level* of vulnerability, i.e., what Minkowski called the 'trouble générateur'. The long-term course of schizophrenia is continuously patterned by this phenomenal level in the sense that the psychotic and residual symptoms are not just random eruptions from or failures of a malfunctioning brain, but reflect reorganizations of consciousness and experience in which the 'trouble générateur' always remains operative and phenomenally dis-

cernible, conferring a degree of coherence, and, in contrast to Jaspers' (53) view, a certain understandability of the psychotic symptoms. In research terms, this generative disorder may help unifying and delimiting the concept of schizophrenia spectrum, and so offer target phenomena for a pathogenetic exploration that may be closer to the biological underpinnings than the symptoms currently emphasized in the diagnostic checklists. In clinical terms, familiarity with the subtle phenotypic vulnerability features as described above may be of crucial importance for early detection and prevention of schizophrenia, which is currently impossible prior to the onset of psychotic symptoms (2). Finally, considering schizophrenia as a partly coherent and understandable reorganization of experience may profoundly modify our therapeutic approach: be it during acute phases or in the long-term care, the accent will not be put solely on reducing the symptoms, but will also acknowledge the patient's "quest for meaning" (54).

Acknowledgement

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Neurodevelopmental impairment, dopamine sensitisation, and social adversity in schizophrenia

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During the early 1980s, the view emerged that schizophrenia had a significant developmental component (1-4), and subsequently the 'neurodevelopmental hypothesis' became the dominant model in schizophrenia research. However, while few now doubt that neurodevelopmental disturbance plays an important role in schizophrenia, it is increasingly clear that the original simple 'doomed from the womb' model offers only a partial explanation for the disorder. Consequently, attention has recently turned to a) whether the process of aberrant development is an exclusively biological one or whether there is also a psychosocial component; and b) what causes the onset of psychosis. There is increasing evidence that dopamine sensitisation provides the link between early developmental deviance and the vulnerability of the preschizophrenic individual to certain stressors in the social environment.

EVIDENCE FOR DEVELOPMENTAL IMPAIRMENT

Risk-increasing effect of early environmental events

A major impetus to the formulation of the neurodevelopmental hypothesis was the evidence that pregnancy and delivery complications (collectively termed obstetric complications or OCs) increase risk of schizophrenia (2). Two meta-analyses summarised much of the early data (5,6), and confirmed an association between OCs and schizophrenia with an odds ratio of approximately 2. There were many criticisms of the methodology in the studies included in these meta-analyses, but the last decade has seen the publication of a series of register-based longitudinal studies of a higher quality. A third meta-analysis, this time of these register-based studies, confirms that exposure to OCs is a modest risk factor for schizophrenia (7). The mechanism underlying the link between OCs and schizophrenia remains uncertain, although one possibility is foetal hypoxia. According to Cannon et al (8), the odds of schizophrenia increase linearly with an increasing number of hypoxic-ischaemic complications, possibly mediated by the excitotoxic effects of hypoxia on the foetal/neonatal brain.

A slight increase in risk for schizophrenia exists among individuals born in late winter/ early spring (9). While some studies suggest this seasonal effect could be secondary to exposure to influenza in utero during winter, other research fails to find such a link (10,11). Other potential, but not yet replicated, early hazards are intrauterine rubella (12), as well as maternal malnutrition (13) and maternal diabetes mellitus (14). Finally, Rantakallio et al (15) demonstrated that the window of opportunity for risk increasing insults is wider than was previously thought, as those exposed to childhood viral central nervous system infections were five times more likely to develop schizophrenia than those not exposed.

Neuroimaging evidence of impaired development

It is well known that there are volumetric differences in certain brain structures between schizophrenic patients and controls. Enlargement of the lateral and third ventricles is the most prominent finding - a meta-analysis of 58 magnetic resonance imaging (MRI) studies reported a 26% enlargement of ventricular volume in schizophrenic subjects (16). Subtle volume reductions are frequently reported in the medial temporal lobe, superior temporal gyrus, prefrontal cortex, cingulate gyrus, thalamus and insula (16,17).

Several lines of evidence suggest that at least some of the structural changes are likely to result from impairment of normal neurodevelopment. Firstly, many are detectable in patients at or near the onset of psychosis, including enlargement of the lateral and third ventricles and reduced volume of cortical grey matter, the thalamus, the left hippocampus/amygdala and the left posterior superior temporal gyrus (18-20). Thus these abnormalities cannot be wholly secondary to disease progression or treatment.

Secondly, some of the brain abnormalities are also found in the unaffected relatives of

patients. McDonald et al (21) examined a large number of families either multiply or singly affected with schizophrenia and found that there was substantial enlargement of lateral and third ventricular volume in those relatives at high likelihood of carrying susceptibility genes for schizophrenia, whereas those relatives at lower likelihood of carrying such genes had similar ventricular volume to the control sample. Enlarged third ventricular volume in unaffected siblings was also found by Staal et al (22), and other structural abnormalities identified in unaffected adult relatives or in younger high risk subjects include reduced volume of cortical grey matter (23), the amygdala-hippocampal complex and the thalamus (24,25). The existence of morphological deviations in unaffected relatives indicate that such abnormalities are not restricted to the pathological process of psychosis but are a manifestation of familial risk factors, the most likely candidates being genes influencing neurodevelopment.

Thirdly, some of the morphological abnormalities identified in adult schizophrenic patients suggest pathophysiologic processes affecting the early developing brain. These include uncommon developmental brain lesions such as aqueduct stenosis, arachnoid and septal cysts, and agenesis of the corpus callosum, which occur with excess frequency in schizophrenia (26). Normal structural cerebral asymmetries such as those of the planum temporale and fronto-occipital petalias also develop during foetal life and some studies have reported loss or reversal of such asymmetries in schizophrenia (27). Similarly, gyrification of the prefrontal cortex achieves stability soon after birth and Vogeley et al (28) have reported right frontal cortical hypergyrification in schizophrenia.

Fourthly, a series of correlations have been reported between early environmental risk factors for schizophrenia and structural deviations in the adult brain. These include early reports (2) of an association between increased ventricle-to-brain ratio on computed tomography (CT) scans and exposure to OCs, although other studies did not find a relationship between OCs and lateral ventricular enlargement (reviewed by McGrath and Murray [10]). Recent evidence points to an interaction between genetic risk for schizophrenia and hypoxic birth events upon ventricular volume, since patients were more likely to demonstrate ventricular enlargement and reduced cortical grey matter volume if they had also experienced OCs than were controls (21,29). Other structural abnormalities such as reduced hippocampal volume have also been linked to OCs (30,31).

Childhood evidence of neurodevelopmental impairment

Children who go on to develop schizophrenia tend to display early neurological and cognitive problems. As early as 1977, Fish (32) pointed out that the increased prevalence of neurological signs in multiple sensorimotor systems in the offspring of schizophrenics was consistent with

an 'inherited neurointegrative deficit'. High-risk studies concur that 25-50% of children born to mothers with schizophrenia have developmental abnormalities, especially poor motor co-ordination in early childhood, and attention and information processing deficits later (33).

Since the majority of schizophrenic subjects do not have an affected parent, Jones et al (34) examined the 1946 British Birth Cohort Study which followed up 4746 children for 43 years. The 30 who developed schizophrenia, as a group, had delayed milestones, more speech problems, and lower educational test scores. Cannon et al (35) compared elementary school records of 400 children who later developed schizophrenia and 400 healthy controls in individuals born in Helsinki. Poor performance in sports and handicrafts, which may indicate motor co-ordination deficits, were risk factors for schizophrenia.

How specific are such predictors for schizophrenia? In the British National Child Development Study, Done et al (36) showed that those who developed schizophrenia had significantly more neurocognitive problems than controls at the age of 7 years, especially if they were males. Children who went on to develop affective psychoses did not differ from controls, while pre-neurotic children, especially if female, manifested poorer social adjustment than controls at age 11. In the Dunedin follow-up study, in which 761 children were regularly studied till the age of 26 years, those who went on to develop anxiety disorders, mania and schizophrenia shared a range of emotional and conduct difficulties. However, only those who later developed schizophreniform psychosis showed neurocognitive or neuromotor impairment. Thus, one can consider the pre-schizophrenic child as exhibiting a general liability to adult psychiatric disorder compounded by a more specific neurodevelopmental impairment (37).

Cognitive impairment has been repeatedly reported in those destined to develop schizophrenia (34). David et al (38) investigated a cohort of nearly 50,000 18-year-old males who were conscripted into the Swedish army in 1969-1970. There was a highly significant linear association between low IQ scores and the subsequent development of schizophrenia, with risk gradually increasing as IQ fell at all levels of intellectual ability. Similarly, Davidson et al (39) examined assessments of nearly 10,000 16 and 17 year old boys entering the Israeli army, and again found a linear relationship between IQ and risk of schizophrenia. Such findings raise the question of whether the association between low IQ and schizophrenia is directly causal, with cognitive impairment compromising information processing and leading to false beliefs and perceptions.

Is there a social developmental component?

All the children in the Dunedin study discussed above were given a structured interview by a child psychiatrist at age 11 years. This included four questions regarding quasi-psychotic ideas (Have other people ever read your mind?

Have you ever had messages sent just to you through TV or radio? Have you ever thought that people are following you or spying on you? Have you heard voices other people can't hear?). Interestingly, children who reported having such ideas had a 16-fold increased risk of schizophreniform disorder at age 26 years (40). Furthermore, having these quasi-psychotic ideas was strongly predicted by motor and language deficits.

Thus, there exists a certain continuity of psychotic symptoms from childhood to adulthood, and the origin of delusions is often more than a decade before psychosis is formally diagnosed. These findings are important in that they demonstrate that quasi-psychotic ideas in childhood are on the causal pathway to frank psychosis and are not simply epiphenomena of an early neural lesion. While it is clear that neuropsychological deficits facilitate the development of such early ideas, the Dunedin findings open the question of whether non-biological factors can do likewise.

Rearing factors

In the British 1946 cohort, those 4-year-old children rated as having a poor mother-child relationship had a 6-fold increase in risk for schizophrenia later on in life (34). Similar findings were reported in the Dunedin study. Of course, this does not tell us whether poor mothering was a causal risk factor, or whether the pre-schizophrenic child was so deviant as to be unable to form a close bond with the mother. Also those adopted-away children of schizophrenic mothers who are reared in adverse circumstances have a higher risk than those brought up in loving homes by stable adoptive parents (41). Furthermore, Mirsky et al (42) noted that children with known genetic risk for schizophrenia were more likely to develop the disorder if they lived in a kibbutz, rather than a family home.

Being brought up in a city

Several studies have indicated that being born or brought up in a city increases the risk for schizophrenia. For example, Mortensen et al (43) showed in a Danish national sample that the relative risk of schizophrenia associated with urban birth was 2.4, and that the larger the town of birth, the greater the risk. van Os and his colleagues (44) have shown that it is not only frank psychosis but also minor quasi-psychotic ideas which are more common in urban dwellers. Pedersen and Mortensen (45) have gone on to demonstrate that there is a dose response relationship between urban rearing and risk of schizophrenia, such that the longer an individual lived in a city as a child the higher the risk. A further risk-increasing factor was move of household particularly during adolescence; the greater the number of moves the higher the risk. The authors raise the question of whether individuals with shy schizoid personalities may have particular difficulties in making new friends following such moves and become increasingly isolated.

Social isolation

The Swedish conscript study discussed before found that young men who felt they were more sensitive than their peers, had fewer than two close friends and did not have a girl friend, had an increased risk of later developing the disorder (46). Once again this raises the question of whether these characteristics are an expression of a schizoid or schizotypal personality or whether they are in themselves independent risk factors. Until proven otherwise, it is wise to consider that both may be true, i.e. individuals with a schizoid or schizotypal personality may be less able to make social relationships and then the social isolation itself may cause them to become increasingly deviant. van Os et al (47) found that people who were single had a slightly higher risk of developing psychosis if they lived in a neighbourhood with fewer single people, compared to a neighbourhood with many other single people. The authors suggested that single status might give rise to perceived (or actual) social isolation if most other people are living with a partner. The question of whether social isolation may increase the risk of schizophrenia (or rather whether a close relationship may be protective) is also raised by Jablensky et al (48), who showed that marriage had a protective effect for males, and that this was not simply a consequence of better-adjusted males being able to marry.

Migration

As far back as the 1930s, Odegaard (49) noted that Norwegian migrants to the USA were at increased risk of schizophrenia, while as recently as 1999, Mortensen et al (43) reported that children born in Greenland to Danish mothers had a relative risk of 3.7 for schizophrenia. The most striking findings have come from the UK, where numerous studies have reported an increased incidence of schizophrenia among African-Caribbean people (50). Hutchinson et al (51) found that morbid risks for schizophrenia were similar for parents and siblings of white and first generation African-Caribbean patients. However, morbid risk for siblings of second generation African-Caribbean psychotic probands was approximately 7 times higher than that for their white counterparts. This study, which almost exactly replicates the work of Sugarman and Craufurd (52), suggests an environmental agent that is operating on this population in the UK but not in the Caribbean. Again social isolation could be relevant; Boydell et al (53) found that the incidence of psychosis in the ethnic minority population in South London (mainly black) is much higher in those areas where few of the minority population live compared with those areas which have a substantial minority population.

WHAT CAUSES THE ONSET OF PSYCHOSIS?

Maturational brain changes?

A major problem for the original neurodevelopmental model was to explain why damage, presumed to be present since foetal or neonatal life, does not cause psychosis until decades later. The solution proposed was that the crucial lesion(s) could lie silent until the operation of brain maturational processes in adolescence expose neuronal circuits that are underdeveloped and are not functional in childhood. The developing brain has a large excess of neurones and axons, which thin out during early development, thus serving to eliminate early errors of connection and to strengthen those that are useful. The relevance of pruning of cortical neurons during adolescence for schizophrenia was introduced by Feinberg (1), who proposed there may be a fault in progressive synapse elimination. Murray et al (54) postulated immature circuitry laid bare by synaptic pruning, a process which continues until after puberty. Early injury could interact with such processes, resulting in patterns of dysconnectivity.

However, if maturational change is considered necessary to interact with an earlier abnormality, might maturational changes on their own be sufficient to initiate schizophrenia? Keshavan et al (55) used magnetic resonance spectroscopy to show that people with schizophrenia show a phosphomonoesterase pattern suggestive of failure of new synapse production and excessive synaptic reduction. This process is postulated to lead to a loss of synaptic connectivity below a critical level (56). Post-mortem studies of schizophrenia consistently show reductions in neuronal size, dendritic spine density and length, synaptic proteins and synaptic gene expression (57). These post-mortem findings are suggestive of pathology of synapses and their connectivity and are compatible with theories which implicate abnormalities of pruning in adolescence.

Structural brain changes which reflect the above processes of late brain maturation can be seen in late childhood and adolescence. These include age-related grey matter volume reductions, greatest in the frontal and parietal convexities (58). Such changes appear to be particularly prominent in childhood-onset cases of schizophrenia, where increasing ventricular enlargement and progressive reduction of cerebral volume, grey matter and temporal lobe structures have been reported (59,60).

Dopamine sensitisation

The neurodevelopmental hypothesis helps us to understand the development of the adolescent at risk for schizophrenia. However, this does not adequately explain what converts an odd, socially isolated adolescent with some deficits in cognition and strange ideas, into a frankly psychotic individual. The answer may lie in the impact of developmental impairment on the mesolimbic dopamine system. As is well known, the dopamine hypothesis of schizophrenia derives from the evidence that all antipsychotics block dopamine D2 receptors, whereas direct or indirect dopamine agonists elicit positive symptoms of schizophrenia. This longstanding theory has recently been bolstered by evidence which directly implicates dopamine dysregulation in the pathogenesis of the positive psychotic symptoms (61). For example, a series of single photon emission computerised tomography (SPECT) and positron emission tomography (PET) studies have demonstrated that patients with schizophrenia release excessive amounts of dopamine in response to an amphetamine challenge and that there is a clear relationship between degree of this release and psychotic symptoms (62,63). Kapur (61) has gone so far as to regard acute psychosis as "a disorder of dopamine-induced aberrant salience."

It is postulated (61,62,64) that the dopamine dysregulation arises from the development of sensitisation, the process whereby repeated exposure to a drug induces not tolerance but rather reversed tolerance with progressively increased neurochemical and behavioural responses. Thus, Kapur (61) states that "somewhere in their late-teens (the usual age for onset of psychosis in schizophrenia) patients develop an abnormality of the dopamine system such that there is an exaggerated release of dopamine, out of synchrony with the stimuli that usually induce them. This state does not lead to any physical feelings, but, leads to the assignment of inappropriate salience and motivational significance to external and internal stimuli."

The relevance of early developmental impairment for dopamine sensitisation is demonstrated by studies which show that animals subject to a range of perinatal lesions develop dopamine systems which are particularly prone to such dysregulation when they mature. For example, Lipska et al (65) reported that hippocampal lesions to neonatal rats remain relatively silent until adult life, when the animals develop hyper-responsiveness to amphetamine and also to stress. Lipska's model (66) mimics many of the abnormalities which are found in schizophrenia, but of course it results from a gross artificial lesion. Boksa and her colleagues (67,68) have shown that a more physiological perinatal stress - anoxia during caesarean section - induces altered mesocorticolimbic dopamine transmission in the rat together with increased behavioural responses to amphetamines and to stress. There is also evidence that perinatal injury in humans can similarly induce subcortical dopaminergic overactivity. Thus, Kapucu et al (69) used SPECT to examine 20 infants with hypoxic-ischaemic brain damage, and noted that neostriatal dopamine D2 binding decreased as the severity of the injury increased. A similar end-result might arise from abnormal cortical pruning. Thus, Laruelle and Abi-Dargham (64) postulate that "during late adolescence, the

failure of cortical development in schizophrenia might limit the capacity of the brain to modulate stress-related activity of the mesolimbic DA neurons. This failure of normal homeostatic and buffering mechanisms results in a process of endogenous sensitisation". They postulate that the increased dopamine activity triggers neuroplastic adaption downstream from the mesolimbic dopamine synapse, and that eventually the neuroplastic changes become independent of dopamine so that positive symptoms circuits become 'hard wired' and the patient becomes treatment resistant (64).

Drug abuse

In animal studies, repeated exposure to drugs such as amphetamines and cocaine induces dopamine sensitisation; in humans this can precipitate psychosis (61,64). The development of persecutory delusions, bizarre delusions as well as olfactory and auditory hallucinations and a variety of thought disorders is well documented in experimental studies (70). Repeated exposure to cannabis and its constituent tetrahydrocannabinol also induces alterations in dopamine transmission and sensitisation to amphetamine in rats (71) and dopamine release in humans (72). It is also known to trigger brief psychotic episodes, and to exacerbate pre-existing psychotic symptoms (73). Several studies show that its repeated use is a risk factor for psychosis. In the best known, Andreasson et al (74), who examined 45,570 Swedish 18-year conscripts, found that the relative risk of developing schizophrenia over the next 15 years was 6.0 for heavy users of cannabis compared to non-users (at time of conscription). The findings of the Swedish Army study have been supported by other studies currently in press which are likely to put the issue beyond doubt (75,76). The latter group, who examined the Dunedin cohort, found that cannabis consumption at age 15 was a risk factor for later psychosis even when one took into account childhood psychotic symptoms.

Do individuals with certain genotypes selectively expose themselves to drugs with psychotogenic effects to which they are particularly vulnerable? In the Swedish conscript study, over half of those who admitted heavy cannabis use at age 18 already had a psychiatric diagnosis (74). Similarly, McGuire et al (77) showed that individuals with cannabis-associated psychosis had an increased genetic risk of schizophrenia. In a large study of methamphetamine abusers, Chen et al (78) noted that such individuals were more likely to have a particular variant of the D4 receptor gene than controls, and further that the 164 abusers who developed a psychosis had a stronger genetic loading and more schizoid/schizotypal personality traits than those abusers who never went psychotic. Thus, it may be that some individuals abuse drugs because they are genetically predisposed to have psychiatric difficulties and, among those individuals who abuse drugs, it is those

who have such a genetic predisposition who are particularly likely to develop psychosis.

Social adversity

In animals there is ample evidence that dopamine sensitisation secondary to developmental insult is associated with an exaggerated response to social stress (67). The same process has been postulated for humans (64) and could explain why an adverse social environment (e.g. social isolation) could have a particularly detrimental effect on the developmentally compromised child. Furthermore, prospective studies have found an association between life events and onset of psychosis (79); stressful life events in the three weeks preceding onset or relapse seem particularly important. One can envisage that such events could produce excessive dopaminergic response in the pre-psychotic individual and that, as dopamine sensitisation becomes increasingly established, smaller and smaller stresses could induce the abnormal response.

IS THERE EVIDENCE OF DEGENERATION?

The neurodevelopmental hypothesis fails to adequately explain the malignant course shown by some patients over time. Wyatt (80) suggested that the likelihood of experiencing deterioration is correlated with the duration and number of periods of active psychosis. Associations between the duration of untreated psychosis and likelihood of developing a more 'malignant' illness initially seemed to support this (81). However, Verdoux et al (82) found that when premorbid characteristics such as childhood function, family history and negative symptoms were taken into account, there was little independent evidence for an adverse effect of duration of untreated psychosis.

It is difficult to attribute schizophrenia with its onset late in life (over 45 years) to neurodevelopmental damage. There is some evidence that these late onset cases have less genetic loading for schizophrenia or exposure to early environmental insults. For this reason, Murray et al (83) suggested that these cases might be secondary to neurodegeneration.

The question of whether a neurodegenerative process also plays a part in earlier onset schizophrenia has been reopened by studies claiming progression of morphological changes after the onset of psychosis. DeLisi et al (84) performed a prospective follow-up of first episode cases of schizophrenia and age-matched controls for a minimum of four years and compared the rate of change over time in the size of certain brain structures. There were differences in the rate of change in the overall volumes of left and right hemispheres and right cerebellum and in the area of the isthmus of the corpus callosum, interpreted by the authors as evidence for a subtle active brain process in the first few years of a schizophrenic illness. Other studies of first episode patients have also found apparent progres-

sion of brain structural changes, such as volume reduction of the frontal lobes (85). Wood et al (86) report a reduction of whole brain volume in both first episode and chronic patients at an average 2.3-years follow-up. Pantelis et al (87), who looked at a small group of high-risk subjects, claim that those who subsequently developed psychosis showed left-sided reductions in parahippocampal, fusiform and orbitofrontal cortex. They concluded that this process may start in the prodrome before frank psychotic symptoms are expressed.

Reports of progression of structural abnormalities are more common in, but not confined to, first episode and early onset cases. Mathalon et al (88) reported that patients with chronic schizophrenia had accentuated loss of fronto-temporal grey matter and enlargement of ventricular and sulcal cerebrospinal fluid spaces at an average 4-year follow-up. Saijo et al (89) reported progressive lateral ventricular volume enlargement in a small sample over a follow-up period of up to 10 years. Several studies report that progression is associated with a more severe clinical course and poorer outcome (85,88,90).

However, not all follow-up studies of first episode patients report progressive changes. DeGreef et al (91) found no change in cortical or ventricular volume over a 1-2 year period, and James et al (92) report no progression during late adolescence of ventricular enlargement in adolescent onset patients after an average follow-up period of 2.7 years. Keshavan et al (93) found that reduced volume of the left superior temporal gyrus in a small sample of first episode patients actually showed evidence of reversal at one-year follow-up. Moreover, as Weinberger and McClure (94) point out, there are numerous methodological difficulties associated with longitudinal quantitative neuroimaging studies. Such difficulties include different resolution of imaging techniques, small sample sizes and inadequate matching of controls and subjects, as well as the uncertain impact of prescribed medication and substance misuse. Furthermore, there is no support whatsoever from neuropathology studies that the findings of volume decrements in follow-up MRI studies reflect neurodegeneration (see review by Harrison [57]). Finally, if there are such changes in the brain, as suggested by some MRI studies, in the first five years following onset of psychosis, how is it that at the same time neuropsychological studies show that cognitive function is either static or improving? Any plausible degenerative theory must explain this curious paradox.

It is worth noting that many studies reporting progression of structural changes have been performed on younger patients in their first episode of illness or with onset in childhood or adolescence, when the brain is still at a crucial stage of development. Thus, one explanation for the confusion over whether or not there is progression of brain changes after onset of psychosis is that those changes noticed are in fact changes associated with late brain development, as suggested by Rapoport et al (60). It

may be that maturation accentuates the trajectory of neurodevelopmental deviance in already compromised brains, without the need to invoke an additional neurodegenerative process.

CONCLUSION

It is indisputable that there is a developmental component to schizophrenia. Dysplastic neural development could account not only for some of the clinical characteristics of the illness but also for the loss of neuropil seen in postmortem studies and the dysfunctional circuitry seen in functional imaging studies (95). However, the original developmental hypothesis requires to be modified in two important ways. Firstly, to encompass the evidence that neuropsychological and social deviance in childhood are not simply epiphenomena of an early lesion but are part of the causal pathway to psychosis; thus, some children show quasi-psychotic ideas many years before the onset of illness. Secondly, the developmental hypothesis needs to incorporate the evidence implicating dopamine sensitisation in the initiation of psychosis; developmental insults such as hypoxia can establish a vulnerability to dopamine sensitisation which can then be later exacerbated by drug abuse and social stress. The sensitised dopamine state provides a mechanism through which social adversity can have an effect and indeed, there is increasingly robust evidence that there exist social factors of aetiological significance such as isolation and migration. As yet we cannot say whether it is necessary to invoke additional neurodegenerative processes; the evidence remains too uncertain. The alternative view is that the deterioration shown by some schizophrenic patients results from the psychological and social consequences of the psychotic state itself, and leads to a downward spiral of increasing social alienation, increasing dopamine dysregulation, and increasingly distorted belief systems.

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The evolving epidemiology of bipolar disorder

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Compared to depression, modern epidemiological studies demonstrated very low prevalence rates for bipolar disorders (BP). These studies were based on reliable interview schedules tailored to DSM-III (Diagnostic Interview Schedule, 1) and to DSM-III-R or DSM-IV (Composite International Diagnostic Interview, 2). The Epidemiological Catchment Area (ECA) Study (3) identified a lifetime prevalence rate of 1.3% for BP (0.8% for BP-I and 0.5% for BP-II) and the National Comorbidity Survey (NCS) (4) reported a lifetime prevalence of 1.6% for manic episodes. In the ECA study (3), 21% of subjects with major depressive episodes (MDE) received a diagnosis of BP; in the NCS (4), this was true for 9% of all cases with MDE.

The question is whether this impressive five to ten-fold preponderance of depression over BP is true or whether the modern instruments miss a substantial proportion of relevant subdiagnstic hypomanic symptoms, leading to a severe overdiagnosis of major depressive disorders (MDD) and dysthymia at the expense of BP-II and cyclothymia. A further question goes beyond the DSM definition of depression and deals with minor depression and recurrent brief depression: what do we know about bipolar variants of these subgroups?

It is obvious that these questions can only be answered by the use of instruments suitable to identify subdiagnostic morbidity. In addition, the distinction between depression and BP is a question of validity; proposed changes of the diagnostic concepts have to show acceptable clinical validity. In contrast to the ECA and NCS studies, the Zurich cohort study suggests that with a hard definition of hypomania one fourth of MDE are BP-II and with a soft definition as many as half of all MDE cases are undetected bipolars (5).

EVIDENCE FROM EPIDEMIOLOGICAL STUDIES IN FAVOUR OF A SOFT DEFINITION OF HYPOMANIA

There are two prospective epidemiological studies which presented data on the validity of subdiagnostic hypomania: the Oregon study (6) and the Zurich study (5).

The Oregon Adolescent Depression Project

This project comprised in wave II 1,507 adolescents, who were re-investigated after a mean interval of 13.8 months at age 17. At the first interview (age 16), a lifetime prevalence of about 1% for BP (mainly BP-II) was found and in addition a subthreshold bipolar 'core positive' group of 5.7% was identified. One important finding was that both the diagnostic and subdiagnostic groups "exhibited significant functional impairment and high rates of comorbidity (particularly with anxiety and disruptive behaviour disorder), suicide attempts, and mental health services utilisation". In a third wave of the study at age 24, 865 subjects could be interviewed and data on first degree relatives were collected by direct interviews (7). The earlier findings were confirmed and it was shown that the relatives of patients with BP and subthreshold bipolar disorder (SUB) had elevated rates of MDD and anxiety disorders. The relatives of SUB probands had elevated rates of BP, while the relatives of BP probands had elevated rates of SUB. Another important result was that 40.9% of adolescents with subsyndromal BP developed MDE and 13.3% developed anxiety disorders, whereas this was the case in only 18.9% and 2.3%, respectively, of adolescents with no history of mental illness. SUB was also a predictor of suicidality (8).

In conclusion, the Oregon study demonstrates that subdiagnostic hypomania is predictive for BP-II and suicidality, and has a clear genetic vulnerability as measured by the family history of BP and SUB in first degree relatives of SUB and BP cases, respectively. It also shows that BP-II is much more prevalent than BP-I.

The Zurich Study

Methods

The study was carried out in the whole canton of Zurich, in which about one sixth of the Swiss population lives. In a first stage, a representative sample of 591 subjects was selected by a screening with the Symptom Check List 90-R (SCL-90

R) (9). Two thirds of the interview sample consisted of high scorers on the SCL-90 R (85 percentiles or higher), one third was selected randomly from lower scorers. By weighting back the two strata of the sample one can extrapolate to a representative group of 2600 persons of the population.

The male sample (N=292) was screened at age 19 and interviewed six times from ages 20 to 40; the female sample (N=299) was screened at age 20 and interviewed from ages 21 to 41. The interviews took place in 1979, 1981, 1986, 1988, 1993 and 1999. After 20 years, 60% of the sample was still in the study. There was no appreciable distortion of the sample by drop outs, and the proportion of the two strata of high and low scorers on the SCL-90 remained stable (10). The interviews were carried out mainly by trained clinical psychologists and psychiatrists with the Structured Psychopathological Interview and Rating of the Social Consequences for Epidemiology (SPIKE, 11).

Results

Some results on the definition, prevalence and validity of BP were recently published (5) and can be summarised very briefly. On the basis of detailed analyses of the diagnostic criteria of DSM-IV and ICD-10, we developed a new hard definition of hypomania by adding hyperactivity to elated mood and irritability as a stem criterion A. We removed the time criterion and kept a symptom threshold of 3/7 criterial symptoms for a diagnosis and added the criterion of social consequences. This new definition was compared in its genetic and clinical validity to the soft definition requiring only the presence of manic symptoms associated either with MDE or mild depression (dysthymia, minor depression, recurrent brief depression). The comparison of BP-II defined by hard or soft definition suggested similar validity: subjects with MDE plus hypomanic symptoms or hard defined syndromes did not differ in family history for mania/hypomania or depression and comorbidity patterns, whereas both groups differed clearly from those with pure MDD: BP-II subjects had a several fold elevated rate of mania among first degree relatives compared to controls and probands with MDD, and the rates of comorbidity with substance abuse/dependence among BP-II subjects were about twice those of subjects with MDD. A further analysis

Table 1 Prevalence rates of bipolar subtypes as a function of definitions (%)

	DSM-IV	Zurich hard definition	Zurich soft definition
Bipolar I disorder	0.55	0.55	0.55
Bipolar II disorder	1.10	5.30	11.00
Minor bipolar disorder	-	3.20	9.40
Hypomania	1.50	3.30	3.26
Total bipolar disorder	**3.15**	**12.35**	**24.17**

of mild depression with the hard or soft definition of hypomania came to comparable results in the family history data and alcohol abuse/dependence. As a consequence of these findings, a soft definition of hypomania requiring the simple presence of symptoms associated with a diagnosis of depression was used as the criterion of bipolarity.

The hard definition of hypomania according to Zurich criteria gave a cumulative prevalence rate of 5.3% for BP-II and 17.1% for MDD, which means that approximately 30% of all MDE cases were bipolar. The soft definition gave equal prevalence rates for BP-II (11%) and MDD (11.4%). Thus, depending on the definition, between one fourth and half of all major depressives were bipolars. Further independent research will have to confirm these thought-provoking results.

Table 1 illustrates the enormous consequences of varying definitions on the prevalence rates and suggests that the DSM-IV definitions might only identify the tip of the iceberg.

DIAGNOSTIC CLASSIFICATION OF MOOD DISORDERS AND MINOR BIPOLAR DISORDER (MinBP)

The current diagnostic manuals include cyclothymia and dysthymia as milder forms of chronic mood disorders. Acute depression is more common than chronic depression (the rate of the latter is about 20-25%). It is well known that minor and recurrent brief depression are highly prevalent, whereas the prevalence rates of dysthymia is comparatively low. In the Zurich study, minor bipolar disorder (MinBP) was common, with a prevalence rate of 7.2% for acute and 2% for chronic cases, the latter representing cyclothymics. This chronicity rate of 20-25% is about the same as among major and minor depressives. The new diagnostic category of MinBP was defined by the presence of dysthymia (chronic minor depression) plus hypomania, or chronic recurrent brief depression plus hypomania (rapid cyclers). MinBP subjects were characterised by high treatment rates for depression (63%), comorbidity with anxiety disorders (42%), as well as substance abuse and offences (5).

ARE THESE NEW EPIDEMIOLOGICAL FINDINGS COMPATIBLE WITH CLINICAL STUDIES?

The new epidemiological findings are in line with modern clinical research. Both the Oregon and the Zurich studies demonstrated that the prevalence rates for BP-II are five to ten times higher than those of BP-I. In this context the findings of a genetic study are of interest: Simpson et al (12) found BP-II in 22% of 219 first degree relatives of 48 BP-I probands and in 40% of 47 relatives of 8 BP-II probands. BP-I secondary cases were almost exclusively present among relatives of BP-I probands (15.5%) and in only 2% of BP-II probands. The authors concluded that "bipolar-II disorder was the most prevalent affected phenotype in both bipolar I and bipolar II families...". In 1987

Akiskal and Mallya (13) found in a clinical sample that bipolar spectrum conditions were as prevalent as their unipolar counterparts. This is also in agreement with new practice studies (14,15), which found 45% BP-II vs. 55% MDD (n=525) when the stem question related to mood, and 60% BP-II vs. 40% MDD (n=168) when the stem question was based on hyperactivity. The high prevalence rate of BP-II found in our study is finally in agreement with the results of the French National EPIDEP study (16,17): a careful re-examination of 537 major depressives almost doubled the rate of BP-II from 21.7 to 39.8% at the expense of MDD.

CONCLUSIONS

There is rapidly growing evidence for the existence of a broad bipolar spectrum, supporting the conclusion that one fourth to one half of all cases with major depression are bipolar. There is also evidence that minor depression, dysthymia and recurrent brief depression are associated to a similar extent with bipolarity in the form of MinBP and its chronic subgroup cyclothymia. We have to test the hypothesis whether every depressed patient manifesting some hypomanic symptoms under any diagnostic threshold is a bipolar. Further research is needed in order to find the most valid definition of soft hypomania associated with depression; in this context a recent suggestion of Akiskal et al (18) is of great interest and should be compared in its validity to our similar definition in an epidemiological sample. Finally, one has to be aware that the distinction between depression and BP has little to do with an inflation or overdiagnosis of mental disorders; changes of the border between the two would only change the relative proportions, not the total prevalence rates.

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Mental health services for victims of disasters

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Disasters, whether natural or man-made, affect lives and property, devastating communities through a chain of catastrophic sequences affecting social and economic developments. They are often events difficult to predict, prevent and control. They impact on individuals to create survivors who must cope with trauma, loss and crisis. They present a challenge to mental health professionals who have to assist the traumatized population. In afflicted communities, a large number of individuals are in the ranks of survivors and rescuers.

In order to design, organize and implement post-disaster crisis-oriented services, an integrated, interactive, flexible linkage system between the mental health organization and emergency management agencies needs to be established. It is important to realize that while mental health professionals organize to assist survivors, multiple activities are taking place within the governmental/public system. Decision making about the 'life situation post-disaster' of the survivor in our care is also managed by other agencies.

Identification of post-disaster need differences between groups of survivors can be exemplified according to whether the physical impact of the disaster is direct or indirect (1): *primary survivors* are those who have experienced maximum exposure to the traumatic event; *secondary survivors* are the grieving close relatives of primary victims; *third-level survivors* are rescue and recovery personnel, medical, nursing, mental health, Red Cross, clergy, emergency staff, firefighters, police; *fourth level victims* are other people in the community involved in the disaster –

reporters, government personnel; *fifth-level victims* are individuals who may experience states of distress or disturbance after seeing or hearing media reports (e.g., bodies of individuals falling down from the Twin Towers after the terrorist attack in New York in September 2001).

POST-DISASTER TIME FRAMES

Dividing and labeling time frames in the sequence of a disaster is helpful to identify both the responses of survivors and the programs that are organized to assist them. Generally the phases are identified as 'threat'/'impact', 'short-term' and 'long-term' (2). Post-traumatic responses follow a sequence that resembles the emotions, thoughts and behaviors documented in the loss and bereavement process. Although the reaction sequences are not of fixed duration, there is a developmental process that has been identified and documented. This process of biopsychosocial coping starts with feelings of disbelief, bewilderment, difficulty in focusing, using denial as the main defense. Anxiety and fear are eventually followed by varied degrees of depression and sadness. Secondary events can influence these processes toward healthy resolution or produce pathological syndromes. Variables like intensity of impact, extended geographical destruction, rapidity of assistance are examples of modifiers that have emerged to categorize reactions to trauma. The inability to comprehend the reality of the destruction of the World Trade Center in New York following the terrorist use of commercial planes unleashed varied mental health disturbances, as well documented by interviews of the mass media.

IMPACT PHASE

Following the impact, the situation is dramatically and catastrophically experienced. Individuals in the affected areas will immediately mobilize themselves and participate with the efforts of rescue, shelter and safety for the citizens. During these efforts, they will organize themselves to deal with the priority of burying the dead, attending to the wounded, identifying frail members of the community, beginning to apply their knowledge of first emergency aid while waiting for resources from the outside (3).

After the first days, when the issues of survival, shelter, food and water are dealt with, mental health issues present themselves as needing attention and generally last beyond the healing of the physical trauma. The following list presents a summary of the key activities that need to be organized and operationalized to deliver a mental health program aimed to mitigate consequences of the disaster in vulnerable populations.

Outreach

These activities are organized in shelters, congregated groups and homes in devastated communities. They aim to provide emotional support during the acute period following a disaster. Outreach assists survivors in expressing and understanding disaster-caused stress, difficulty in sleeping and thinking clearly, and grief reactions, aiding individuals to return to a state of equilibrium and function. Information is given to clarify that their reactions and behavior are normal and are expected due to the abnormal situation in which they suddenly find themselves (4). Following the earthquake in

the Republic of Armenia in 1988, which resulted in over 250,000 deaths, efforts were organized by international agencies to develop an assistance program. In her report, A. Sanentz Kalayjian (5) compares the outreach efforts of that disaster to the earthquake in San Francisco and Hurricane Andrew in Southern Florida. She describes the difference of preparation, resources and preparedness following these disasters, pointing to the necessity of organizational capacity to assist survivors.

The emerging knowledge learned in disasters through the years helped professionals modify and reformulate intervention modalities to focus on the 'person-situation configuration' as the unit of attention in post-disaster psychosocial treatment. This intervention post-disaster is now well known. Post-disaster crisis counseling is defined as "a mental health intervention technique useful in post-disaster events that seeks to restore the capacity of the individuals to cope with the stressful situation in which they find themselves". It has three aims: a) restoring capacity of the individuals; b) reordering and organizing their new world; and c) assisting the victims to deal with the bureaucratic relief emergency program" (6). The methodology to bring about these objectives varies according to the 'school of thought' used by the professional. The reality circumstances mandate a short, flexible, creative, adaptable approach compared to the usual organized, systematic clinical approach. This is an area where continued efforts to adapt clinical skills and modified approaches will be enhanced as professionals learn from one disaster to the next. Differentiating variables like age, sex and cultural backgrounds point to the fact that both reactions and successful interventions differ in children, adults and the elderly of different cultures, traditions and religions.

Assisting families

When death occurs following the impact of the disaster, families need preventive mental health services, as they constitute a population at risk (7). The degree of loss, which includes loved ones, property, community, employment and unfamiliar surroundings, may overwhelm their coping capacity.

Offering help in the morgue, near the common burial grounds (where victims may be buried due to fear of epidemics) is a proper function for mental health workers. Collaboration with spiritual and religious representatives is very important. This is especially poignant when the body cannot be found/rescued and no burial plan can be offered as occurs in aviation accidents or multi-building fires.

Assisting survivors in shelters

Intervention procedures are related to the assessment of the shelter survivor situation. When this situation lasts more than a few weeks, the survivors' frustration can erupt in violence, anger and depression. The shelter mental health worker will have to ascertain how the condition of the survivors will impact on their ability in problem solving and coping with the challenges of the crowded environment found in countries with limited resources. A triage method to apportion resources needs to be developed. The ratio of needs and number of helpers will guide this procedure. Intervention objectives for the survivors in the shelter include helping them achieve physical comfort and increased capacity to organize their living area, as well as support to solve problems with the surrounding survivors. To concretely implement an intervention, the trained professional will first constitute himself/herself as a member of the sanctioned assisting team within the shelter. This permits the freedom to approach survivors and begin the interaction to offer support and guidance with respect to the expressed thoughts and emotions manifested by each survivor. The mental health helper will organize all his/her observations and data, as the survivor shares information about what happened to him/her, into a preliminary diagnosis, to ascertain the level of crisis and coping exhibited by the survivor. Using crisis techniques the intervention begins to be formulated, including emotional support and empathy, and accepting the feelings of denial and distortion. During the initial stages following the impact of the event, the survivor's cognitive system will cloud reality so as to filter painful thoughts. While receiving support, he/she will need at the same time personal guidance, assisting with plans and giving orientation and information. As time proceeds, the mental health worker may follow the survivor out of the shelter into temporary housing or have a team member continue with the assistance. During this period, a number of problems develop which survivors, emotionally traumatized, have difficulty in solving.

Collaboration, education and consultation with medical emergency personnel dealing with wounded or burned survivors will assist in the recovery toward a healthy outcome. It is important to verify if the population is struggling not only with the impact of the disaster, but also with a myriad of health and mental health problems preceding the disaster. The need to sort out the mental health status of the survivor will facilitate the triage work and assist in the decision for referral if long-term professional services are needed.

SHORT-TERM PHASE

The program objectives for consultation, education and assistance change during the weeks and months after the disaster. The acute phase is over and now a new post-disaster phase, that can last months, emerges with different problems facing the survivors. Mental health disaster workers can be trained to identify the new problems, which include all the ranges of depression, anxiety and post-traumatic stress disorder (PTSD). A variety of treatment approaches have been developed in the last few years, combining psychotherapeutic techniques

and medications. Many survivors of traumatic experiences suffer not only from the stress-related syndromes but also from depression, alcohol or drug abuse or personality disorders. If the disaster involved the death of a close family member, untangling the grieving process from the traumatic circumstances of the loss becomes an important part of the assessment. Treatment in general addresses two elements that are found in most survivors: the traumatic memories and the physiologic response of the organism that was exposed to danger. Both will last periods of time beyond the end of the event. Among the psychological treatment options, cognitive, exposure and behavioral approaches are being used by professionals. They aim to recreate, in a safe environment, the traumatic memories, fantasies, fears and sadness produced by the trauma. The survivor repeats the memorized events over and over and slowly but regularly they lose their capacity to inflict anxiety and pain. Medication therapy addresses many of the physiologic disorders. Antidepressant medication will lower anxiety and reduce sleep disturbances, startle reactions, difficulty in returning to function. Large trials of selective serotonin reuptake inhibitors are being carried out in order to assess their effectiveness in reducing the above symptoms. Additionally, group therapy, family therapy and therapy for children add to the choices available after a disaster.

Mitigation of further deterioration of the capacity of survivors can be achieved during this phase if preventive measures are taken. One important program that emerges is the school program for children, parents, teachers and administrators. Due to the fact that these individuals are congregated in institutions to help with the education of children, the opportunity to assist them as a nuclear population appears very effective if they are educated about preventive mental health approaches (8). Women, as heads of households in developing countries, are an important group that needs assistance in their functions of

caregiver and to help them obtain resources to reconstruct their lives.

Another group that needs guidance are the survivors who have lost their homes and are frustrated in the lengthy rebuilding schedule of the country. Cases with diagnosable pathology are more frequent in this group and referrals to professionals need to be instituted.

Severe acute stress reactions, PTSD, depression and anxiety syndromes that increase in severity during this phase can be ignored, misdiagnosed or poorly treated if the professionals are not trained for disaster mental health problems.

LONG-TERM PHASE

A program of support services needs to be extended to the traumatized individuals for longer periods of time than generally is expected. When agencies are aware that a percentage of individuals at risk are unable to fend for themselves for a variety of reasons, their services can include assistance with finding shelter, employment and health resources. This part of the program is difficult to implement in certain countries due to the lack of resources.

'BURNOUT SYNDROME' OF CAREGIVERS

The mental health of rescue professionals following a disaster is an important component in emergency operations (9). Their job can expose them to the most gruesome sights and smells. Even though they are prepared, in their daily work as policemen, fire fighters, ambulance drivers etc., to come in contact with painful experiences, when this is multiplied by 100's or 1000's of bodies that have to be disposed of, the impact is severe. Nobody is prepared or immune to this devastating effect. Added to this, we need to consider fatigue, intense dedication to the task with reluctance to be relieved from duty, even for a short break. This was exemplified by the angry reaction of the firefighters who battled with police when they were asked to stop working

in the area of the remains of the World Trade Center disaster. The basic components of the intervention consist of debriefing, identifying critical incidents, helping set the situation in perspective, and reinforcing the capacity and skill of the worker (10). The step-by-step procedures are as follows:
1. introduction to the objectives, format, time-table, confidentiality of debriefing;
2. asking the members of the group to voice their experiences;
3. sharing responses and reactions;
4. explaining and understanding the reactions;
5. identifying coping methods using cognitive and educational methods;
6. closing the meeting and offering further help if necessary.

UTILIZATION OF PARAPROFESSIONAL WORKERS

In some regions there is a need to develop a combination of professional and paraprofessional response teams to assist survivors. Professional and paraprofessional workers can combine efforts successfully to provide a disaster recovery response that is grounded in crisis theory and intervention techniques. Professionals have resorted to variations and experimentation utilizing a variety of human resources, according to availability. Certain conditions emerge as necessary to accomplish the objectives of successful use of paraprofessionals. These include:
1. individuals with some counseling experiences;
2. individuals with communication skills and sensitivity to the ethnic, social and religious characteristics of the victim;
3. training sessions and close supervision throughout the intervention program.

PRIVATE SECTOR UTILIZATION

Recently the private sector of mental health services has increased its volunteer activity after catastrophic impact on citizens in urban settings.

There are several conditions that need to be fulfilled before a private professional can participate in these activities. They include:

1. knowledge of local post-disaster plans and networking with disaster agencies (e.g., Red Cross, government teams, clergy);
2. skills in crisis intervention, consultation and education.

CROSS-CULTURAL ISSUES IN DISASTER ASSISTANCE

Some involvement of the political institutions in disaster response is universal and, in many cases, extensive. The level at which the government becomes involved differs significantly among various societies. Disaster response in the United States is deemed primarily a local responsibility, except when local resources are severely diminished by a direct impact. In other societies, however, disaster response is considered primarily a national responsibility of governmental involvement. In these pattern areas, the armed forces are given not only a major supporting role, but also frequently a controlling role in disaster response activities.

Religious institutions also differ in their involvement. In part, this is due to their degree of differentiation and institutionalization and, to a certain extent, to their secularization and the extent of the scope of their pre-disaster activity. The clergy has an important mental health role following some disasters, specially when there were large numbers of fatalities, as exemplified by earthquakes in Armenia, or slides in Honduras (11).

EDUCATION

Opportunities for media communication and dissemination of mental health information present themselves following a disaster. The human story in disaster is compelling and media professionals seek psychiatrists to interview at a rapid pace. In the midst of community crisis, the impact of these messages exert a strong influence. There are two specific areas that offer objectives to be accomplished by educational methods. One area deals with our knowledge of how the population has been psychologically affected by the trauma and the sequences of the stress response to the disaster. The other area is to offer knowledge of how the mental health system will respond and what professionals have to offer in post-disaster situations. Each of these areas has: a) methods; b) content; and c) structure to disseminate knowledge. Disseminating information about the mental health services, including consultation and education, facilitates the actual operations of assistance.

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Managing the psychiatric morbidity of disasters

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Predicting the morbidity from disasters requires clear conceptual frameworks about the different categories of victims and also the manner in which the consequences emerge over the passage of time. Disasters by their nature are events that create confusion and challenge the ordinary structures within a society to manage the basic needs of that social group. A clear conceptual map is of considerable help in minimising the sense of chaos and restoring the provision of needs. There is now a sufficient body of data about the psychological impacts of disasters to begin to think about these events from a broad conceptual framework. In essence, these are events where an environmental stressor can be conceived of in a similar way to a physical environmental toxin that creates a risk in those with differing degrees of exposure. The management response can be informed by using public health models for minimising the consequences of exposure and ensuring broad based approaches are applied.

Unfortunately, however, the essence of disasters is their unpredictable nature. One of the problems with disaster plans is that they are based upon the experience from the previous catastrophe. It is always critical that the management's strategies are highly flexible and based upon a constant reappraisal of the needs of the victims. For this reason, it is important that the survivors are not categorised in an excessively rigid way.

For example, individuals that are typically associated with rescue and recovery can at times themselves, also be primary victims of the event if they arrive at the scene as the catastrophe unfolds. The death of a significant number of fire fighters in the World Trade Centre collapse on September 11, 2001 is indicative of this issue. Furthermore, with the increasing frequency of travel, many disasters involve victims from a very wide geographical spread. This is perhaps best exemplified in circumstances of an aircraft accident. The establishment of a disaster management service within the local community will address the needs of the rescue personnel and any individuals affected who were resident at the site of the crash. However, structures also need to be able to establish outreach to the communities from where the victims came. This is again a challenge to many disaster plans, which are often organised at a regional rather than national level.

The interest in disaster affected populations is intense in the first days and weeks that follow these events. Often, communities are overwhelmed by offers of help and assistance. One of the challenges in managing the mental health response to a disaster is to create a momentum in these early weeks that leads to the establishment of programs that function over a period of years in the aftermath of the event. Although the awareness of the importance of traumatic stress as an aetiological factor in mental illness has increased significantly in recent times, few public mental health services are well equipped with specialist skills in this domain. While disaster plans may be in place, it is critical to check the level of expertise within the organisations that are designated to provide these interventions. Disasters can provide an opportunity to upgrade the skills and re-direct the interests of mental health services so they are then better able to deal with the victims of multiple traumatic stressors that occur day to day within communities. Significant rates of traumatic stress as a consequence of violent crime and motor vehicle accidents tend to go unnoticed because of the isolation of the victims. People who have survived these events do not attract the same public concern or empathy as the victims of a disaster. In the aftermath of an event, maintaining a focus on individual victims is a way of ensuring that there is an embedded body of skill within a community who can then respond if some larger scale event occurs. The workers within community mental health systems often welcome such an initiative as it provides them the opportunity to work with a different range of clients than would normally be demanded.

As the popularity of the psychological care of disaster victims has risen, a new problem has emerged. There is the phenomenon of convergence where many mental health professionals eager to assist can tax the resources of the organisation trying to manage the acute response. It is critical that systems be put in place to limit the contact with victims during this phase and also to have some check on the credentials and skills of people who come forward to provide assistance. It is important that a list of all the individuals who are contacted by each service provider are stored centrally so that systematic follow up and auditing of these interventions can occur.

There is also a danger in that bringing in experts in the management of the acute phase of the event, if not carefully integrated with existing services, can disrupt the natural community networks that would be facilitated at the time of such events. The general practitioners and primary health networks play a central role in dealing with the mental health effects of most disasters. The majority of the population prefer to seek the assistance of individuals with whom they are already familiar and can trust. An essential element, therefore, of any mental health plan is to upgrade the

skills of these primary health care workers and general practitioners in the immediate aftermath of the disaster. The demands that they will have to meet will be in the months and years that follow. Many victims are willing to tolerate their distress and symptoms in the first weeks and even months after the event. It is only when time fails to heal that there are increasing rates of presentation to health services. Then many people present with physical symptoms rather than simple psychological distress. It is important that this time lag is capitalised upon so that training can be put in place to upgrade the skills of the providers during that period of time.

Whilst the debriefing movement has done much to heighten an awareness of the psychological impact of these events, it is important to recognise the limitations of this approach. The early promise of its effectiveness in the prevention of post-traumatic stress disorder (PTSD) has not been realised (1,2). Providing early services, therefore, does not minimise the need for planning for systems of care for victims in the medium to longer term. The nature of the post disaster environment can be a critical issue in determining the levels of morbidity. Therefore, one central role of individuals in planning post disaster interventions is to assess these risk factors and to define populations who are likely to be in particular need of assistance.

Research plays a critical role in the aftermath of these events, both because of the specific and general lessons learned. Many emerging understandings of PTSD have arisen from carefully planned epidemiological research in these settings. These findings also have direct benefits to the populations because they do provide a method for monitoring and assessing the outcomes. Disasters involve the exposure of populations to stresses that are not infrequent within individual communities. The collective consequences are very useful for highlighting the increasing evidence about the detrimental impact of these events on the mental health and well being of the exposed communities and individuals.

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Special teams for medical/psychological intervention in disaster victims

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A disaster is defined not only by material, but also by psychosocial criteria: a) it causes psychic suffering, b) it brings unhappiness, c) it causes perturbations in the human environment, and d) it strikes the society's functions, such as production-distribution-use of energy and water, circulation of persons and merchandises, etc. Thus, in a disaster, each victim, witness or rescuer, is wounded not only in his/her personal ego, but also in his/her communal ego. Therefore, we must take in consideration not only the individual but also the collective reactions and behaviours. The mental health intervention must be adapted to these distinctions and to the three phases of the disaster psychology: a) the immediate phase (first hours), b) the post-immediate phase (first days, first weeks), and c) the chronic phase (after one month).

The immediate reaction to disasters is usually the normal adaptive biophysio-psychological reaction of stress. It is useful, life-saving, focusing attention, mobilizing the mental and physiological capacities and prompting to decision making. But, it is accompanied by disturbing neurovegetative symptoms and, if it is too intense, too long or too repeated, it exhausts the energetic reserves and becomes overwhelming stress, in one of its four modalities: stuporous inhibition, uncontrolled agitation, individual panic flight, and automatic behaviour (acting by reflex or blind imitation, without consciousness or recall of the action). In predisposed individuals, we can also observe neurotic (anxious or hysterical) or psychotic (confusional, manic, delusional or schizophreniclike) reactions (1).

The post-immediate reaction can be the progressive extinction of stress symptoms, or a short-delayed emotional or neurovegetative reaction, or the variable persistence of neurotic or psychotic states. But it can be also the beginning (latency period) of a durable or chronic psychotraumatic syndrome, the so-called 'post-traumatic stress disorder' (PTSD). The latency period is not completely silent clinically: we can observe perplexity, sadness, abnormal euphoria, and insomnia.

The psychotraumatic syndrome is well known to clinicians. It covers a large range of cases, more or less severe and durable, corresponding to complete PTSD or elements of PTSD, and associate anxious, depressive, psychosomatic or personality pathology. Its main symptoms are the reviviscences of the event, the increased arousal and alertness, with insomnia, the avoidance of everything that recalls the trauma, and withdrawal from the world and from others (2).

The ICD-10 has introduced the category of 'modifications of personality after an experience of catastrophe', emphasizing the marked change of the whole victim's personality.

Collective behaviour is different from the arithmetic sum of the individual behaviours which seem to compose it. It depends on the collective mind of the people, and eventually on the collective soul of the crowd, and it has its own psychological characteristics. Collective behaviours can be adjusted or maladjusted (1). Adjusted behaviours accomplish learned adaptive actions: evacuating in order, helping others, etc. They are characterized by three aspects: a) group structure is maintained, b) leadership is maintained, and c) mutual help is offered. Maladjusted behaviours include collective stupor (people remain without initiative or evacuate the damaged zone in a slow centrifugal stuporous exodus), collective panic (distracted flight, pitilessly overthrowing and trampling all that obstructs it) (3), discharge of violence, identifying scapegoats, and regressive desire of being perpetually assisted (4). Maladjusted behaviours are characterized by three elements: a) group structure is destroyed, b) leadership disappears, and c) crowd mentality prevails, without solidarity.

In the immediate phase (first hours), the early, immediate, mental health intervention is a moral obligation. Experience shows that victims who receive an early medical/psychological help have less severe sequelae. The mental health intervention must include: a) medical/psychological care provided by medical specialized teams, and b) psychological support provided by psychologists and mental health personnel (helped by para-professional workers). In France, the official network of the 'medico-psychological emergency cells' provides immediate intervention on the ground, with teams (psychiatrists, psychologists and nurses) integrated into the network of the medical emergency teams. Their mission is: a) to give care to mentally wounded people and to treat the disturbing symptoms of stress, b) to ensure the triage and the evacuation of the above people (5). They work in close collaboration with teams of psychosocial support, who provide help to the other victims. In this immediate phase, care includes not only the administration of anxiolytic or antidepressant medication, but mainly listening to the victims expressing their stress or trauma experience, and providing information about the reactions, the symptoms and their evolution. This early medical/psychological care and support is called 'defusing'.

In the post-immediate period, not only the medical/psychological follow-up of the hospitalized victims must be assured, but 'debriefing' (individual or in groups) must be proposed to victims and rescuers who need it. Experience shows that debriefing for rescuers must be conducted according to cognitive and narrative principles, while debriefing for victims must be based on the expression of emotions (cathartic method) (2).

In the chronic phase, the treatment of PTSD (complete or incomplete) and associated pathology (often misdiagnosed) must be ensured as soon as possible, because any delay facilitates the development of the morbid process. This treatment must be provided in a special setting (different from the ordinary psychiatric settings, because the victim of disaster does not consider himself/herself as a psychiatric patient), by psychiatrists and clinical psychologists specially trained in PTSD and disaster psychiatry.

Collective panic is difficult to deal with, and requires public order measures taken by the authorities. Other collective maladjusted behaviours (collective inhibition, collective dependence, scapegoating phenomena) require the intervention of mental health personnel. The help of paramedical personnel and institutions will be appreciated.

Prevention can be provided in the warning phase (giving exact information on the upcoming disaster and instructions on the appropriate reactions), but it is better to ensure long-term prevention. Long-term prevention, in countries frequently struck by natural disasters, includes four phases: a) information (on the risks and dangers), b) moral education (mutual help and solidarity), c) instructions (about means of protection and rescue) and d) training in exercises. Education of rescuers and leaders must be made available, dealing not only with the stress of the victims and its effects, but also with the stress of rescuers: how to recognize it and cope with it.

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Mental health services for victims of disasters in developing countries: a challenge and an opportunity

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In the past few years, significant progress has been made in knowledge about the psychiatric and psychologi-

cal consequences of disasters. At the same time, as Raquel Cohen shows us in her article, the mental health interventions and services necessary to meet the specific needs of victims of disasters have become well known. The importance of ensuring the provision of mental health care to victims of disasters is today largely accepted. However, the implementation of these services is a difficult task in many countries. The development of mental health services and interventions for these populations is a particular challenge in developing countries, where mental health resources are scarce and usually concentrated in large institutions, and where responses to disaster situations face many other obstacles.

What can be done to meet this challenge? The Pan American Health Organization (PAHO) has dedicated significant efforts toward disaster relief for more than 20 years in Latin America and the Caribbean, and recently has been systematically integrating a mental health component in these efforts. PAHO's experience shows that, even in countries with very few resources, the development of mental health services for victims of disasters and the preparation of countries for disaster situations can be significantly improved by the use of particular strategies. The strategy most commonly employed in the past has been the dispatchment of international mental health teams to the locale of the disaster. While this strategy has proved useful in meeting the immediate needs of the country, especially when well integrated in the larger relief plan, it has not helped the countries prepare fully for future disasters. To attain this latter objective, additional strategies are needed.

The first is the formulation of a national plan to address mental health in the context of disasters, or the integration of a specific disaster response component in the national mental health plan. This plan should clearly define: a) the agency responsible, in a disaster situation, for developing a rapid assessment of the psychosocial needs of the affected population,

defining priorities and coordinating actions; b) the roles of non-specialized personnel (primary care professionals, school teachers, community agents, among others) in providing psychosocial care to the victims of disasters, and the mechanisms to ensure their participation; c) the services (psychiatric hospitals, general hospitals, community-based services, emergency teams, non-governmental organizations) responsible for providing direct psychiatric treatment to affected persons and how these services are integrated into the general response plan; d) the mechanisms to provide intensive mental health training to professionals and community agents in disaster situations; e) the mechanisms to educate the community and promote its participation in the process of social recovery.

Another important factor in the development of mental health services for victims of disasters is the existence of a strong mental health unit in the Ministry of Health. This unit must have the technical resources and the political support needed to formulate and implement mental health plans, and to coordinate activities developed jointly with other sectors.

Training and education are fundamental strategies in preparing countries to provide psychosocial care in disaster situations. Disaster response strategies should be integrated into training curricula for psychiatrists, psychologists and other mental health professionals, and training materials for professionals and other participants that can assist with psychosocial interventions in disaster situations should be produced.

International cooperation is particularly important in this area. In the Region of the Americas, PAHO sponsored a recently published manual on mental health for victims of disasters and guidelines for trainers (1,2). PAHO in 2001 organized two workshops on mental health interventions in natural disasters and situations of war and is finalizing guidelines on this issue. These initiatives integrate the new strategies with the old: training of

experts that can intervene in emergency interventions in the future, and dissemination of knowledge and building capacity at the country level.

Research remains a priority in this field. Since the reviews of research on the epidemiology of psychiatric and psychological consequences of disasters were done by Kohn and Levav in 1990 (3) and by Bromet and Dew in 1995 (4), significant advances were made in this area. However, still there is a lot to be done in the future. In collaboration with Brown University, PAHO has supported research on the mental health consequences of Mitch hurricane, in Honduras. This project is a prospective study of the psychiatric and psychological disorders in a large community-based sample, which has survived a life-threatening natural disaster. There is a well-defined control group, and modifying and predisposing factors are examined. Preliminary results confirm that the state of disaster seriously affected the mental health of the population (22.1% of the population were identified as psychiatric cases, 18.3% had major depression and 11.1% post-traumatic stress disorder). They also show that factors such as the level of exposure, socioeconomic status, and previous mental disorders are significantly associated with the level of psychological distress.

All the above-mentioned measures are critical in strengthening the capacity of countries to provide mental health care to the populations in disaster situations. However, to ensure sustainable capacity, they must be part of a national strategy aimed at the development of community-based mental health services. In fact, the existence of a network of community services is the best guarantee that in a disaster situation a rapid and effective intervention will be implemented to meet the mental health needs of the population.

The development of mental health services for victims of disasters in developing countries is, therefore, a stimulating challenge, demanding the participation of several sectors at the country level and the contribution of

international cooperation. At the same time, as has been demonstrated in several countries, it is a great opportunity to raise awareness of the importance of mental health and to improve nation-wide mental health services. The public discussion of mental health and the mobilization of mental health resources in the aftermath of September 11, 2001 events provides the most high-profile example, but other recent disasters in Latin America, e.g. the earthquake in El Salvador in 2001, and the fire in Lima, Peru in 2002, had the same effect of creating new interest for mental health and new opportunities for initiatives in this field. Let us build on these experiences to minimize future tragedies and maximize mental health services potential in developing countries.

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Mental health intervention and high-risk groups in disasters

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Raquel Cohen's paper provides all psychiatrists and mental health care providers with the opportunity to update their disaster psychiatry skills. Since September 11, 2001 and the World Trade Center terrorist attack, the import of the article by Cohen is all the more. Disasters, human made and natural, as well as war and terrorism, which are of course another type of human made disaster, affect the lives of millions throughout the world. Natural and human made disasters disproportionately impact the most vulnerable of our populations, who are often housed and work in vulnerable areas near rivers, in earthquake prone areas and near factories and industrial plants. Following a disaster, appropriate mental health interventions may be forgotten or prioritized last due in the rush to respond. Support services and restoration of safety and physical health needs are always the first psychiatric interventions for the direct victims of a disaster. These are the elements of initiating the recovery and providing hope for the future (1).

The mental health needs after a disaster vary both by the impact and exposure and by preexisting vulnerabilities (2). There are those who have had no previous mental health problems and now suffer from post-traumatic stress disorder (PTSD). Approximately 34% of people exposed to the Oklahoma City bombing developed PTSD 6 months after the disaster (3); of them, nearly 44% had never had any prior psychiatric diagnosis. On the other hand, there are those who will experience a reactivation of a previous episode of psychiatric illness such as PTSD, depression or substance abuse. In addition, those who may have been able to manage before a disaster, using resources from the community to sustain themselves by getting to work on a transit system and having assistance with family needs, may now find that their support is less and not enough to main-tain them in the community. In large-scale disasters, the loss of one's medications and even the place where they were obtained can lead to both immediate and long-term increase in psychiatric illness. Finally, the mental health needs of the wider population who now fear either a second event or a new previous unsought-of terrorist attack (4), or still rising river or threatening tornado or toxic spill must be considered. Anticipation of exposure to a trauma can have a powerful effect on behavior, cognition and feelings and in itself can aid in predicting future psychiatric needs. The media can be and will, even if not planned, be part of the public education plan for recovery, directing expectations and informing on the process.

The needs of rescue and disaster workers as well as their spouses and significant others (5) is an important part of all disaster planning. These dedicated first responders work with survivors and victims, recover the dead and may suffer the loss of their colleagues in their often dangerous work. Identification with the dead ('It could have been me') may increase risk for PTSD in disaster workers (6). Planning for the care of rescue and disaster workers is best done prior to a disaster.

While spouses of those who died are often considered for mental health intervention, less often are provisions for care made for the parents of an adult victim who suffer the loss of their life's plan with the loss of their adult child.

Working with primary health care providers is an important part of reaching those who are injured. This group has high rates of psychiatric illness and requires a proactive psychiatric evaluation and assessment plan rather than relying on referral for care. In addition, the opportunity to educate primary care providers in recognition of bereavement, depression, PTSD and substance abuse can assist in the early identification for treatment and intervention.

Psychiatric care, including crisis counseling, psychotherapy, medication and education of health care providers and community leaders, requires pre-

planning the development of networks of concerned people to assure the needs of our patients and communities are met in times of disaster.

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Disaster mental health: lessons learned from the Hanshin Awaji earthquake

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In the early morning of 17 January 1995, Kobe city (1.5 million inhabitants) and surrounding urban areas were devastated by the Hanshin Awaji earthquake, which killed more than 5,500 people immediately and made more than 350,000 people homeless. Soon after the earthquake, almost 1.5 million volunteers from all over Japan and from abroad came to visit the Kobe area and helped victims to recover from the damage. The memory of the disaster is still vivid among Kobe residents and survivors, including myself. The event was very tragic. However, we have learned many lessons through this experience.

Organization of manpower on the site. The Hanshin Awaji earthquake was not at all expected in Japan. Central as well as local government, hospitals, communities and families had made no preparation for a big earthquake in the Kobe area. When the earthquake struck, there were no coordination and directions. The victims behaved based on common sense. They tried to rescue other family members by themselves, moved to shelters (mostly to nearby schools), lined up for food and water, shared their experiences with other victims at shelters. Almost no cases of looting and violence were reported. The arrival of professional rescue team was very late, due to the delayed decision and congestion of roads by private cars. This teaches us the importance of disaster preparedness for the whole population (1).

Contribution by volunteers. It was reported that more than 1.5 million volunteers, mostly University and college students from all over Japan and housewives from nearby areas, visited Kobe areas and stayed for several days to provide supports to the victims. They helped the victims (many of them were old) to carry their belongings, to get the food, to bring water, to clean their shelters and to fill in official papers. Also, they listened to stories by victims who, sometimes, lost their family members and close friends. Volunteers were very helpful to the victims, as they could feel that they were not abandoned and isolated. However, there was a total lack of coordination. Some shelters close to the main roads had many volunteers and some isolated shelters had no volunteers.

Mental health services for the victims. What was most appreciated by the victims was the support for their daily life rather than professional psychiatric services. Some groups of psychiatrists set up disaster mental health care clinics at shelters but almost no clients came. Victims talked of their experiences to volunteers who helped them. Local mental health workers prepared simple guidelines for volunteers on how to listen, encourage and keep confidentiality. Most severely affected victims stayed at shelters for several weeks and exchanged their experiences. This provided an invaluable opportunity for debriefing (2).

Each phase has different mental health problems. The first reaction to the disaster was a kind of emotional numbness, the loss of the sense of reality, an abnormal sense of time. Within a few days, this phase was followed by the phase of anxiety and fear of aftershock. Many victims became talkative and restless. Battlefield friendship prevailed. Stress related somatic symptoms, such as hypertension and stress ulcer, were observed. Within a week, anxiety and sleep disturbances became manifest among residents of shelters. Depression and depressive symptoms appeared a few weeks later, when people came to face the loss of family members, housing, money and communities. This phase continued for several months and sometimes for years. After a year, the dominant problems of victims became of social nature. Aged victims lost the hope to live. Many started drink alcohol to forget the difficult reality (3). More than 230 victims died unattended at temporary houses. It was hard to provide support to the victims at temporary houses due to the lack of manpower and financial resources. The establishment of communal space and self-help groups among victims living at temporary houses were very useful to prevent solitary death.

Post-traumatic stress disorder (PTSD). The prevalence of PTSD after the Hanshin Awaji earthquake varied greatly. Several factors, such as diag-

nostic criteria, sites of collection of samples, timing of the survey, contributed to the different results. PTSD should be considered as part of the variety of mental health problems among victims of the disaster. Anxiety, sleep problems, depression, chronic self-destruction including alcohol abuse, were common among victims of the Hanshin Awaji earthquake. PTSD did not carry the stigma usually attached to mental problems: the concept was widely used and accepted by Japanese mass media and was used as a synonym for the whole range of psychological problems after the disaster in Kobe. One can even say that the concept of PTSD has contributed to decrease the stigma attached to mental health problems and psychiatrists after the Hanshin Awaji earthquake in Japan.

From victims to survivors. The Hanshin Awaji earthquake brought a tremendous damage to Kobe city and its residents. The city lost about 100,000 population after the disaster, as many had to leave the city due to the closure of factories and workplaces. However, the population gradually recovered and has returned to the same level before the earthquake after five years. Kobe city built several memorials. Several United Nations and governmental agencies for disaster prevention were set up in the Kobe area. Kobe University, with the support of the government, opened the Research Center for Urban Safety, and our medical school, heavily affected by the disaster, built new hospital buildings with a renewed department of disaster medicine. An international training course on comprehensive medical care for disaster victims was started, with the support of the Japan International Cooperation Agency, aiming to transfer our experiences and technologies for disaster management to experts from various developing countries. This transfer of experiences constitutes a continuous process in our recovery from the Hanshin Awaji earthquake. One could say that sharing is the source of our recovery from the disaster (2).

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Disaster mental health care: the experience of Turkey

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The comprehensive review by Raquel Cohen puts forward a systematic approach to mental health services for disaster survivors. Mental health workers are nowadays increasingly aware of the necessity to be equipped with the abilities required in effective disaster work, since the world is becoming more insecure in terms of traumatic life events. People are struck with either man-made disasters, such as terrorist attacks affecting thousands of people, industrial accidents and war, or natural disasters, such as earthquakes, floods or tornadoes. In natural disasters, one can also clearly see that the impact of human-made errors, such as unsafe construction of buildings or lack of environmental policies, increases the likelihood of losses.

The literature on disaster psychiatry emphasizes the features of populations at risk, in order to support the affected populations according to their mental health priorities (1,2). The classification in Cohen's paper, indicating the post-disaster need differences, gives a shortcut for major differences of exposure to the effects of disaster. The 'primary survivors', who have experienced the maximum exposure to the effects of the disaster, are obviously the group that should have the highest priority for medical and mental health interventions. The other groups, with a descending order of exposure to the traumatic event, have their own unique needs for medical care, community aid and psychological support.

Disasters, having a global impact on a community, are different from other traumatic events such as an airplane crash, traffic accident or assault. They undermine the material and moral resources of the whole community, affecting the social structure, leaving the survivors under a greater risk for potential psychiatric morbidity (3). Mental health services should be planned in advance for the post-disaster period, since available resources can better be allocated before the disaster strikes the community.

August 17, 1999 was a date of collapse, grief and great personal and material loss for the population of the Marmara (North-Western) Region of Turkey. An earthquake (7.4 on the Richter scale) caused the death of 18,000 people according to official records, injured around 50,000 people and left thousands of people homeless. The epicenter was in the Marmara Region, which is the area in Turkey with the highest population density. It is estimated that 20 million people were exposed to one of the most devastating earthquakes of the 20th century. On the other hand, a remarkable support was provided by the international community by disaster aid, rescue efforts, financial resources, and medical and mental health services.

The 'post-disaster time frames' indicated by Cohen were experienced step by step in the 1999 earthquake. Psychiatrists, under the umbrella of the Turkish Medical Association and the Psychiatric Association of Turkey, the Turkish

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Psychologists Association, the Psychiatry Departments of major Universities, and the Bakirköy Research and Teaching Hospital for Psychiatry and Neurology, organized outreach services in the disaster area.

Training provided by experienced Turkish and foreign colleagues went hand in hand with outreach services that were organized in tent camps, gathering places of the survivors and medical and rescue facilities.

The experiences of this period suggested that conventional clinical approaches should be modified in a flexible manner, according to the circumstances and the setting, where there is limited space, time and other resources, such as inadequate helping personnel, medication, rest and physical health.

A number of different studies in the first six months of the disaster showed a high prevalence of post-traumatic stress disorder (PTSD), ranging from 22.7 to 76% (4,5).

This period was a time of confusion, exhaustion and grief, but also a time of solidarity, heroism and efforts by non-governmental organizations. If the survivors were not motivated for their daily activities, they were observed as resorting to excessive demandingness, regressive behavior, and withdrawal from basic activities, which sometimes caused conflict between them and the aid staff.

Adapazari is one of the cities deeply affected by the earthquake where mental health services were initially inadequate. The 'Psychological Support and Psychiatric Treatment Project for Psychological Problems Caused by the Earthquake in Adapazari' (ADEPSTEP) was started due to this inadequacy five months after the earthquake by a group of mental health professionals from two major psychiatric departments in Istanbul. The main objective of the project was to assess psychiatric morbidity and psychosocial problems in the traumatized population, and to provide treatment and follow-up for 12 months. The population that was assessed (n=350) was a low-income group, and had a high level of personal and material loss (39.4% had a close relative who was killed by the earthquake). 60.5% of these people received a diagnosis of PTSD. In the group with this diagnosis, 44.7% had a comorbid depressive disorder, 17% had one or more anxiety disorders, 4.3% had a comorbid somatoform disorder (5,6).

The ADEPSTEP experience has provided valuable information on the long-term post-disaster phase. People with low socioeconomic status are reluctant to utilize mental health services. Community mental health services and education should be provided in the pre-disaster period. Trained psychiatrists cannot always provide on-site services in the long-term phase; therefore, training programs for primary care physicians have been developed and implemented in different regions of Turkey (7,8).

These steps should remind the professionals and the society at large that disaster mental health care should be a continuous effort. The process should start from the pre-disaster period by being prepared for the disaster in all aspects, and proceed through the different phases of the post-disaster period until the rebuilding efforts of the community and the individual accomplish the restoration process.

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Behavioral consequences of disasters: a timely reminder

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The psychological and psychopathological consequences of disasters (mainly anxiety, depression, acute stress reactions, post-traumatic stress disorder) have remained undernoticed for a long period of time. After the Vietnam War, however, their significance has been highlighted and following the Twin Towers disaster the extent to which they affect the lives of not only the victims but also their relatives and society as a whole can no longer be overlooked.

The WPA has established a Special Program on Disasters, headed jointly by the present author and J.J. López-Ibor, to coordinate the Association's efforts in this important area and to collaborate with our very active section on Military and Disaster Psychiatry. At the Yokohama World Congress, the above section, in collaboration

with the section on Anxiety and Obsessive Compulsive Disorders, has organized a full day of presentations (symposia, discussion groups, courses, poster presentations) dealing with the behavioral effects of disasters. Additionally, the development of training centers (initially in France, Spain, Israel and Argentina, but later on in other countries) in the area of stress-trauma and disaster interventions is being scheduled. It is felt by many that not only professionals but also the general public and the decision-makers should be aware of the potentially catastrophic behavioral effects of disasters and that measures should be taken not only to manage these effects but also to prevent them. Since primary prevention is an area in which psychiatrists have only a marginal role, other players must be involved. These include politicians, non-governmental organizations, volunteers, policemen, priests, firemen, teachers, journalists and society as a whole. The obligation of our profession (and our professional associations) is to increase the awareness of the public on the behavioral effects of disasters, and to increase the citizens' motivation and eventual involvement.

In my own country, Greece, as well as in other countries of the area, notably Turkey, natural disasters are occurring with, comparatively speaking, great frequency. These disasters adversely affect the lives of great portions of the population and may produce considerable psychopathology. Earthquakes are among the natural disasters that occur with great frequency in Greece, a country with considerable seismic activity.

The earthquake that hit Athens Metropolitan area on September 7, 1999 had a magnitude of 5.9 on the Richter scale and was the second largest in the last twenty years. The death toll was 152, and more than 25,000 persons were evacuated, mainly in nearby tents.

The special service of Athens University Department of Psychiatry for the psychological support to earthquake victims was mobilized immediately after the event. The service consisted of two mobile psychosocial support units, one central unit at Eginition Hospital and a telephone helpline unit. During the 6 weeks of operation of the unit, 159 subjects contacted the facility. A proportion as high as 85% of the subjects fulfilled ICD-10 criteria for acute stress reaction. The most frequently reported symptoms were: exaggerated responses to being startled, difficulty in getting to sleep because of worrying, and pounding heart or accelerated heart rate. It is important to note that some early symptoms (extroverted or introverted aggression, narrowing of attention and some symptoms of autonomic hyperarousal) can have a predictive value as to the probability of developing acute stress reactions. Additionally, subjects who had been exposed to catastrophic events in the past and subjects who developed an acute stress reaction were found to be more prone to the development of post-traumatic stress disorder.

Raquel Cohen's review and similar comprehensive and knowledgeable contributions come at a good time. They serve the purpose of alerting physicians to the need for acquisition of more knowledge and better skills in the prevention and management of the behavioral consequences of disasters.

Mental health care for people with mental retardation: a global perspective

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There has been a transformation in the care of people with mental retardation since the late 1960s. One of the most important changes has been the movement towards integration, participation and choice for people with mental retardation, being a facet of larger disability, civil, and human rights movements internationally and within nations. This movement has usually formalised in the activities of charitable or advocacy organisations, or consortia of such groups. These have pursued legal challenges to rights deprivation at the national or local level, engagement with bureaucrats involved in policy development, and participation at all levels of the mental retardation service system.

Advances in a number of fields and disciplines, including genetics, psychopharmacology, developmental neuropsychiatry, psychology, and education have also shown promises for improving the treatment and lives of people with mental retardation. In addition, the provision of more appropriate models of social care has had a substantial impact in improving the quality of life of people with mental retardation in community settings, and enabling staff, carers and families to be more involved and more effective.

People with mental retardation represent a heterogeneous group with a varied range of highly complex needs. The different professions involved in this area have diverse perspectives about people with mental retardation, each giving inconsistent and ambiguous terms and categories. In addition, most cultures use ill-defined and changeable social labels, which are either stigmatising or promoted as non-stigmatising. As a result, it is very difficult to be assured that the groups identified in various nations as having mental retardation are comparable, with some definitions potentially encompassing larger segments of the population than others. As well, different terms are used in different countries. In the United Kingdom the Department of Health replaced the term 'mental handicap' with 'learning disability' in the early 1990s, without taking into consideration the different connotation of the term in the rest of the world. The American Association of Mental Retardation decided in 1993 that the term 'mental retardation' should stay, and re-defined it as a significantly sub-average intellectual functioning existing concurrently with related impaired limitations in two or more of the following areas of skills: communication, health care, home living, social skills, community, self-direction, health and safety, functional, academic leisure and work, manifest before the age of 18. 'Developmental disabilities' is also used, instead of mental retardation, mainly in Australia and Canada. In recent years, the term 'intellectual disability' has been adopted by some international organisations and is gaining ground as an 'international term' for people with mental retardation.

SERVICE DEVELOPMENTS FOR PEOPLE WITH MENTAL RETARDATION

Services provided for people in Westernised nations are similar, usually publicly funded, and encompass residential accommodations, productive day involvement, supportive services such as respite or parent training, and some clinical services. Substantial numbers of people are registered on public waiting lists for residential accommodation, as developments lag behind demand to varying degrees in different nations, provinces or states. Commonly, both public agencies and charitable organisations provide service, with a tendency for public agencies to provide institutional or highly specialised (e.g., intensive care) services and charitable organisations to provide supportive services. There has also been a trend for delivery of a wide range of residential, especially community residential, day, clinical, and supportive services from the public to the charitable sectors.

Residential options can include specialised institutional settings, non-specialised institutions (e.g., nursing care or mental health facilities), group homes serving from a handful to 10-15 people each, specialised and non-specialised foster care, supportive apartment living with drop-in supervision, and for some, home purchase subsidies. Day options can include a range of organised programs addressing habilitative,

prevocational, vocational preparation, adult educational, and competitive or assisted employment. Day services can be highly individualised, or provide relatively non-individualised programs, and be either centre-based, or distributed in their activities throughout communities. Clinical services are often provided by hospitals, speciality clinics, community clinics, university-based clinics, and by charitable organisations. In some instances, professionals who are public employees may supplement specific clinical services in short supply. Supportive services, which have grown massively in their availability and variety in the past 15 years, are typically provided on demand and in a tailored manner by charitable organisations.

There are significant differences in the availability and character of mental retardation services not only among nations, but also among provinces or states within nations and among localities in provinces or states. These differences reflect variations in national and local policies, historic levels of public financial commitment to health and social services, cultural considerations, and competing federal and local priorities for utilisation of scarce public funding. Differences in the availability of services can differ as extensively among localities and states as among nations.

International organisations of individuals and agencies serving people with mental retardation have not typically developed guidelines for service systems. Instead, there have been guidelines developed with international applicability with respect to specific goals or clinical concerns, such as use of psychotropic medications (1), and the assessment and diagnosis of mental health problems (2). There have also been United Nations documents, such as the Universal Declaration of Human Rights, the Declaration on the Rights of Mentally Retarded Persons, and the Declaration on the Rights of Disabled Persons. Most Westernised nations have national policies regarding mental retardation services, and funding mechanisms that are focused on providing services and supports to people with mental retardation. In some instances, however, these two efforts are not closely integrated, in the sense that the priorities identified in policy may not be addressed in funding streams or may require use of resources from multiple funding streams. In such instances, implementation of policy may lag behind its adoption, and changes in service delivery, to a significant degree.

COMMUNITY LIVING

In the USA, the number of institutionalised people with mental retardation decreased drastically in public institutions and state psychiatric facilities, falling by 23% between 1967 and 1976 and by 46% from 1976 to 1996. International changes in the use of institutional care from 1981 to 1991 showed great diversity: rates of annual decrease in the use of institutions were from -1.6% to -5.9% in Scandinavia, from +0.4% to -5.0% in the European Community, +0.6% in Eastern Europe, and -3.3% in the USA (3).

Utilisation rates for mental retardation institutions in the USA, 1998 ranged from 0.0 in 10,000 general population in four states to 5.1 in 10,000 (4). A total of 15.5 in 10,000 were receiving residential care, with 57% served in settings for six or fewer people, and 30% served in settings for 16 or more people. Of this latter group, 42% were served in specialised mental retardation facilities and the remainder in non-specialised facilities, including a small proportion, perhaps as many as 7%, who may be living at mental health facilities.

Approximately one in five mental retardation institutional residents in the USA has a co-occurring mental disorder, and costs for care attributable to these individuals are twice those of their peers in the same residential contexts (5). This finding suggests that in some states as many as 1.2 per 10,000 people with mental retardation and co-occurring mental disorder may be served in institutions, and at lower rates in various other types of more integrated residential settings. However, with continuing shifts in the USA to utilise smaller settings, it has become more likely that the majority of people with both mental retardation and mental disorders will live in these smaller settings in many states.

The development of a wide range of residential settings, respite care, daytime activities, employment opportunities and mainstream education, have all been major achievements for people with mental retardation and their carers. A wealth of literature has demonstrated that institutional closure can be achieved with a variety of positive outcomes for those residents concerned (6). However, people with mental retardation resettled into community establishments without very careful planning can become understimulated and withdrawn, and their psychiatric and behavioural problems may become more overt (7).

MENTAL HEALTH NEEDS

The term mental health needs refers to people with mental retardation who have any psychiatric diagnosis included in any of the international classification systems or a behaviour disorder requiring psychiatric intervention. People with mental retardation are estimated to be three to four times more likely than those in the general population to experience an emotional, behavioural or psychiatric disorder (2).

The assessment and diagnosis of mental health problems in people with mental retardation has improved with the development of specific diagnostic tools. Our knowledge of the clinical presentation of psychiatric disorders in people with mental retardation has also increased. The association between certain behavioural disorders and specific genetic syndromes has opened up the possibility of different treatment approaches. Recent advances in molecular genetics have provided further evidence that specific syndromes of mental retardation are associated with a behavioural phenotype (8).

As the life expectancy of people with mental retardation has increased significantly, substantial numbers of them are now living well into old age and presenting similar mental and physical health problems and care needs as the elderly population (9).

The realisation that the full range of therapeutic interventions employed in general psychiatry can be utilised, adapted as necessary, in the treatment of psychiatric disorder in people with mental retardation has created an atmosphere of therapeutic optimism (10).

In some parts of the world, such as the UK, there are psychiatrists and psychologists specialising in the mental health problems of people with mental retardation. In many countries, however, this is not the case, and general psychiatrists, paediatricians and other professionals without special knowledge of their problems, may look after people with both mental retardation and mental disorders. In the USA, where it is common for states to operate separate and distinct sectors for public mental retardation and mental health services, special concerns arise regarding increased needs for co-ordination and integration of joint care across these sectors, as well as among service organisations and clinicians.

The interest in the mental health problems of people with mental retardation has established the Psychiatry of Mental Retardation as a distinct psychiatric speciality in an increasing number of countries. There has also been a corresponding growth in service developments, staff training, care and treatment, research, specialist textbooks and journals, international organisations and conferences devoted to the subject.

The international initiatives include the work of the WPA Section on Mental Retardation since the 1979; the National Association for the Dually Diagnosed in the USA since 1983; the European Association for Mental Health in Mental Retardation since 1992; and the establishment of a Special Interest Research Group in Mental Health by the International Association for the Scientific Study of Intellectual Disability in 1998.

Specialist publications have appeared in recent years to raise awareness and promote evidence-based practice in the field. The WPA Section on Mental Retardation published 'Mental Health in Mental Retardation: the ABC for Psychiatrists, Primary Care and Other Professionals' (11), which has been translated into Italian and Spanish. The European Association for Mental Health in Mental Retardation published the Practice Guidelines for Assessment and Diagnosis of Mental Health Problems in Adults with Intellectual Disability (2). The WPA Section on Mental Retardation has lauched a new publication at the 12th World Congress of Psychiatry in Yokohama entitled 'Autism and Related Disorders' (12). The National Association for the Dually Diagnosed in the USA has recently developed a comprehensive training resource manual on mental health and mental retardation, providing trainers with guidance in selection of training for physicians, other clinicians, managers and administrators, and case managers (13). The Journal of Intellectual Disability Research has also been publishing two special issues per year since 1998 on the mental health problems of people with mental retardation.

SPECIALIST SERVICES

The fundamental changes in the philosophy of care and clinical advances have highlighted the need for new service systems to support people with mental retardation to live in the community. Specialist services maximise staff skills and competencies, increasing the probability of effective and successful treatment, and provide a base for teaching, training and research. Attempts to provide mainstream psychiatric services for people with severe levels of mental retardation have proved less than successful. Evidence based research is, however, very patchy. Evaluation of current provision is therefore necessary to identify the most effective forms of service provision and in developing 'best-practice' guidelines (14).

A growing number of specialist mental health inpatient units for people with mental retardation, linked with mental health services, seems to have started in various parts of the world (e.g., Massachusetts, New York, London, Hong Kong). Although some of these services are not well integrated with community care organisations, often their main aim is to promote continuity of care and to support different community programs for people with mental health problems and mental retardation.

A concerted action project of the European Union examined the strengths and weaknesses of mental retardation services in five European countries: Austria, England, Greece, Ireland and Spain (15). Several gaps were identified particularly in relation to generic mental health service provision. In many cases service provision to this group of people is ad hoc and dependent on the good will and the personal commitment of the professionals and volunteers involved. Policy and legislation tend to separate the disability aspects of people with mental retardation from their mental health needs, which remain largely invisible. It appears that there is a sense of unmet need for people with learning disabilities and mental health needs, which might be a direct reflection of the lack of policy clarity and legislation, or lack of planning, or lack of implementation. The effects on the lives of people with learning disabilities, their families and carers are pernicious.

Staff find working with people with mental retardation and mental health problems stressful. Giving them skills in this area so that, with support, they can manage people with mental health problems enables them to find this work more rewarding. Flexible training materials, which can be used by staff groups in their own settings, are now available (16,17), and distance education opportunities hold promise for expanded delivery of staff education by university-based experts in mental retardation and mental health. Results demonstrated the effectiveness of training

workshops in improving service user mental health, with significant reductions in the number of psychiatric symptoms (18).

CONCLUSIONS

The last decade has seen the development of more individualised empowering and inclusive approaches to services for people with mental retardation. Most of these developments are based on a process of person-centred planning. Self-advocacy supports people with mental retardation taking more control over their lives and helps involving them in decision-making for service planning. However, the mental health needs of those with dual diagnosis continue to be overlooked and remain grossly unmet. More effort is required from all concerned to address this major gap constructively and using evidence-based practices.

The challenge for the future is to maintain this momentum and increasingly improve services. In many countries services are still patchy and variable and in very few there is a clear and comprehensive national policy.

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Psychophysiology in psychiatry: new perspectives in the study of mental disorders

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The activity of the WPA Section on Psychophysiology is aimed to favour the development and dissemination of psychophysiological techniques in the study of the neurobiological bases of mental disorders, and to promote the collaboration among different groups actively involved in this research field.

A renewed attention to psychophysiological methods in psychiatric research has been brought about by recent theories proposing that psychopathological phenomena do not result from a dysfunction of one or more brain regions, but from the failure to integrate the activity of different areas involved in cognitive processes (1). In this perspective, neurobiological research should tap the dynamics of complex interactions over time among cerebral regions involved in the poorly integrated cognitive processes. The pursuit of this goal requires the use of techniques with high sensitivity to the smoothest deviation in complex and integrated processes that last fractions of seconds. Techniques with these characteristics might also contribute to our understanding of the effects of psychotropic drugs on the central nervous system: it is increasingly acknowledged, in fact, that psychotropic drugs act by modifying the connectivity within largely distributed corticosubcortical neural circuits. Thus, brain imaging studies on receptor occupancy or modifications of cerebral blood flow or metabolism should be complemented by psychophysiological indices of integrated brain processes.

This brief report will illustrate some recent developments in psychophysiological research, to which some members of the Section have significantly contributed, that might help integrating time and space information to improve our understanding of psychopathological processes and psychotropic drug action. Due to space limitation, we will concentrate on findings concerning schizophrenia and antipsychotic drugs.

THE BRAIN ELECTRICAL MICROSTATES

Multichannel recording techniques were introduced to gain insight into the topography of brain electrical activation during cognitive processing. The use of a large number of electrodes provides a better spatial sampling of the electrical brain activity on the scalp and, theoretically, improves the possibility of relating it with the activation of the underlying brain regions. However, this attempt is hindered by the dependence of scalp-recorded electrophysiological data on the reference electrode: any change in the latter is followed by changes in the topography of the scalp electrical field, preventing physiological interpretation. The Brain Electrical Microstates (BEMs) represent one of the most promising, and now widely used, methods of spatial analysis devised to overcome the above problem. BEMs are segments of stable configuration of the brain electrical activity recorded from the scalp and, according to Lehmann, represent the elementary units of cognitive-emotional processing (2,3). In fact, the technique provides indices of activation and integration of the neural networks with a time resolution in the order of milliseconds. Each BEM reflects the coordinated activation of neuronal circuits involved in a specific brain process or state (2). The transition from one mental state to another is indexed by significant changes in the topography of brain electrical activity, which give rise to the beginning of a different microstate. The computation of BEMs requires the transformation of the recorded data into measurements independent of the reference electrode. The BEM technique also allows a powerful data reduction, since topographic information contained in each microstate can be reduced to four numerical values, which correspond to the spatial coordinates of the electrical field topographic descriptors. Other parameters of the BEMs provide quantitative information on the electrical field, such as its strength, latency and duration, reflecting the intensity of the network activation, and the timing of a specific mental process. The analysis of the topographic characteristics of the BEMs, their duration in time and their sequence allows the integration of space and time information.

Studies using the BEMs in healthy subjects have provided valuable information on cognitive-emotional processing in the brain (4,5). The application of the technique in psychiatric populations has shown several alterations of the topography, duration, latency and sequence of the BEMs (6,7).

In subjects with schizophrenia, alterations in the timing and sequence of BEMs during spontaneous mentation, particularly in the acute phases of the illness, have been reported (8,9). Such alterations indicate a difficulty in maintaining a coordinated activation of neural networks involved in mentation, which might be due to a disorder in brain functional connectivity, in line with recent conceptualizations of schizophrenia (1). The study of the BEMs corresponding to specific information processing steps has shown topographic alterations only in some subjects with schizophrenia and might identify a specific course and subtype of the syndrome (7,10).

THE LOW-RESOLUTION ELECTROMAGNETIC TOMOGRAPHY

The Low Resolution Electromagnetic Tomography (LORETA) (11) represents a method for three-dimensional source imaging of electromagnetic scalp activity. It is well known that the scalp field of electromagnetic activity can be accurately reconstructed when the brain sources are known, while the so-called inverse problem (i.e., from the scalp field to the brain sources) is not yet solved, since there are several combinations of simultaneously active sources for each scalp field. The LORETA approach to the inverse problem is to select the solution that is most probable (i.e., has the lowest probability of error) among those calculated for any scalp field. LORETA also selects the smoothest solution, i.e., the one in which brain regions close to each other have similar values of activity. The latest LORETA version allows a three-dimensional source tomography, with the calculation of the activity for 2394 voxels in the cortex and the hippocampus.

The results of validation studies for LORETA are encouraging. They include the accurate identification of simulated brain sources and of the known generators of human evoked potentials, the comparison of epileptic foci identification with respect to subdural recordings, as well as the comparison of findings concerning functional brain abnormalities in dementia with other brain imaging techniques, such as positron emission tomography (11-13).

The application of LORETA to spontaneous electroencephalographic rhythms in subjects with schizophrenia has indicated that the well-established electrophysiological pattern of abnormalities (increased slow and fast activities and reduced alpha, with respect to healthy comparison groups) has topographic specificity, i.e., indicates a condition of abnormal functional connectivity within frontal and temporo-parietal networks (14). In keeping with these results are LORETA findings concerning source abnormalities underlying topographic deviations of the BEMs. In fact, a deficit of source activity has been documented in largely distributed networks including anterior and temporo-parietal regions (15). Recent data (16) have shown that only subjects with non-deficit schizophrenia have reduced activity in the left hemisphere sources of the P3 event-related component, in line with the results of the only other report on P3 abnormalities in this subtype of schizophrenia (17).

ELECTROPHYSIOLOGICAL INDICES IN THE PREDICTION OF CLINICAL RESPONSE TO PSYCHOTROPIC DRUGS

The prediction of response to psychotropic drugs is of great interest in psychiatry, since the lack of efficacy or incomplete response to treatment may extend hospitalization time, increase direct and indirect costs of the illness, and, according to the so-called neurotoxicity hypothesis, worsen the illness prognosis.

An increase of quantitative EEG (QEEG) alpha activity, more often in the slow alpha range (7.5-9.5 Hz), has been reported in patients with schizophrenia following high potency neuroleptic administration (18). Several independent groups have reported a relationship between the increase of QEEG alpha activity during neuroleptic treatment and a favourable clinical response (19-21).

Few pharmaco-EEG studies concerning the prediction of response to novel antipsychotics have been carried out so far. On the whole, their findings suggest that traditional pharmaco-EEG indices, such as changes in either absolute or relative power (or in the percent of time spent in each frequency band for the period analysis), might not be sufficient to predict the therapeutic action of the drug. These indices inform us, probably better than any other available technique, about the drug availability at the target organ and about some of the downstream effects of complex interactions among different neurotransmitter systems. However, the complex changes in brain activity primed by atypical antipsychotics require the use of a more complete set of measures, in particular topographic and connectivity indices. Lacroix et al (22), in a paper reporting QEEG activity before and during clozapine treatment, found no relationship between QEEG changes in the amplitude of any frequency band and clinical response, while observing significant relationships between the reduction in alpha and theta band coherence and a favourable response to the drug. A recent magnetoencephalography study (23) has reported a significant effect of clozapine on absolute dipole values and dipole localization in the fast frequencies (12.5-30 Hz) over the left hemisphere, especially in the temporoparietal regions. Such an effect was not observed in haloperidol treated patients and in healthy subjects.

CONCLUSIONS

Recent technical advances in recording and analyzing brain electrical activity allow an evaluation of brain functioning with a high temporal resolution, as required by mental processes chronometry (24). The availability of topographic and tomographic techniques to study brain electrical fields and their generators, in combination with the high spatial resolution neuroimaging techniques, such as positron emission tomography or functional magnetic resonance imaging, might contribute to clarify open issues concerning brain functioning in normal and pathological conditions, as well as the mechanism of action of psychotropic drugs. It is important to stress that the analysis of brain electrical activity not only provides indices of neural population activation, like other brain imaging techniques, but also allows the evaluation of the degree of cooperation among different brain regions and neural populations. As psychopathological phenomena most probably depend on an altered connectivity among different brain regions, rather than being caused by an increased or decreased activity of one or more brain regions, the study of brain electrical activity by means of the above illustrated methods and techniques appears of crucial importance for research on neurobiological bases of psychopathological phenomena and on the mechanisms of action of psychotropic drugs.

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From epidemiology to intervention for depressive disorders in the general population: the ODIN study

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Depression is a common, often chronic condition leading to personal disability and significant socioeconomic costs. Published European studies indicate a point prevalence of depression in adults ranging from 4.6 to 8.8% (1-4). Relapse is common, occurring in up to 75% of cases within 10 years (5). Depression has an impact on the community greater than that of many chronic diseases (6,7). Most research on depression in Europe has been undertaken in urban settings. The few available studies assessing differences in prevalence of depression between urban and rural areas vary strongly in their findings (1,3,8,9). The variety of outcomes could be attributed to differences in the measures used and in selection and sampling of rural and urban areas. The Office of Population Censuses and Surveys (OPCS) survey of psychiatric morbidity in Great Britain (3) reported higher rates of depression in urban than in rural areas but relied on the interviewers' opinion of whether subjects lived in an urban, semi-rural or rural area. For more valid conclusions on the impact of the urban:rural ratio, a comparative European study is needed using the same instruments and research design in different European regions.

Few studies have attempted to influence people with depressive disorders using an epidemiological framework. In addition to direct help by general practitioners (10), there is a need for strategies to enhance self awareness and encourage early help seeking, with the intention of reducing the duration and severity of depressive episodes. Problem solving approaches can be taught easily and have been shown to be effective in health care settings (11-13). Psychoeducational group approaches have been found effective (14), for example as a preventive measure with adolescents (15), and people who are unemployed (16).

In 1996 the European Commission funded the Outcome of Depression International Network (ODIN) study. This project had essentially two aims: a) to provide data on the prevalence, risk factors and outcome of depressive disorders in rural and urban settings within the European Union (EU) based on an epidemiological sampling frame; and b) to assess the impact of two psychological interventions on the outcome of depression, in terms of service utilisation and cost. The ODIN project is the first population-based study that incorporated into its design a randomised controlled trial of individual problem-solving treatment and a group psychoeducation programme. Subjects identified as cases in the epidemiological phase were offered the chance to take part in the controlled trial. This paper will describe the methods of the ODIN study and present a summary of the main findings (see also 17,18).

METHODS

Identification of centres and sites

The following criteria were used to identify suitable centres: expertise in mental health epidemiological research and/or research into strategies for the prevention of depression; access to urban and rural populations; a geographical and cultural spread across Europe. On this basis the project brought together five independent partners in Liverpool, Dublin, Oslo, Turku and Santander. Each centre identified a rural and urban setting in which to conduct the research. The urban areas divide into three large coastal cities (Dublin, Liverpool and Oslo) and two medium size towns (Santander and Turku). The rural areas were defined as having no centre of population greater than 15,000 people, and having at least 20% of economically active citizens engaged in occupations directly related to agriculture, fishing or forestry.

Sampling

Target populations and sampling frames

Adults aged 18-64 were the primary survey population. Community study samples were identified through census registers or lists of

patients registered with primary-care physicians. These sampling frames may be considered equally valid in terms of the reliability of the data sets (19). Census registers may be highly reliable at the time of collection, but suffer from attrition over time, and the quality of electoral registers in Britain has been vitiated by their use for local taxation purposes. Primary-care registers, accessed conjointly across a locality, offer a slightly different but equally accurate representation of the population. In the present study, the different research teams involved made the choice to use one sampling procedure or the other - i.e. either census records or lists of patients registered with primary-care physicians - based on their previous experience in community surveys. Three centres (Oslo, Turku and Santander) had previously achieved high response rates through population register surveys, and therefore used this method for first-phase screening in the ODIN study. Subjects in Britain and Ireland were identified through primary healthcare registers, a selection process similar to the one used in the EURODEP study that assessed the prevalence of depression among those aged ≥ 65 at the Dublin and Liverpool centres (20). The Irish research team had to reduce the scope of its intended sampling and interviewing procedures due to operational problems which arose during the study. At the rural site in Ireland, the registers of five general practitioners were involved, out of a total of 27; in Dublin, the registers of two general practitioners were involved, from a total of 390. At the British rural site, seven of the nine practices that covered the population area took part in the study; in Liverpool, 32 practices of the 106 that covered the population area participated.

In Oslo, Turku and Santander, the sample was randomly drawn from the population registers of the five sites (two in Norway and Finland, one in Spain) involved in the study. In Liverpool, a random set of patient names was obtained from health authorities, and interviewers contacted the practices with which the patients were listed. In Northern Wales and Ireland, the procedure was to identify relevant practices, and obtain random sets of names from their patient lists. The entire sample was stratified by sex and age in all the centres.

Assessment methods

First phase

The first-phase assessment identified possible cases of depression using the Beck Depression Inventory (BDI) (21), with a threshold score above 12 (22). The BDI was combined with a questionnaire on social support (23), the List of Threatening Experiences (24), and sociodemographic details. In Santander, the first phase was conducted by home-based personal interview. In all other centres, it was conducted using an initial postal survey, with postal, then telephone, then home-visit follow-ups. All refusals were accepted, and non-responders were contacted up to three times.

Second phase

All of those scoring at or above the BDI threshold and a random 5% of responders were offered detailed interviews with research workers trained in mental health, conducted in the subject's language. To date, most of the epidemiological studies on depression in the general population have used strict definitions of depression, according to DSM-III/IV and ICD-10 criteria, focusing on the prevalence of depressive episodes or major depression. This may lead to a tendency to consider severe/major depression as the only affective disorder worthy of intervention. In order to overcome such a prejudice, in our study we extended the definition of depressive disorders to include dysthymia and adjustment disorders with depressive mood. The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) Version 2.0 (25) was used to generate diagnoses of depressive disorders on the basis of ICD-10 and DSM-IV categories. For ICD-10, these include single and recurrent depressive episodes (F32, F33), bipolar and persistent affective disorders (F31, F34), and adjustment disorders with a depressive component (F43.2). For DSM-IV, these include depressive, bipolar and adjustment disorders with a depressive component (codes 293.83, 296.xx, 300.4, 309.xx, 311, V62.82). Disability was assessed using the short form of the Medical Outcome Study (MOS) General Health Survey (SF-36) (26,27). Social adjustment was assessed using a modified version of the Social Functioning Schedule (28), and quality of social network by a modified version of Miller and Ingham's 29 questions about close and diffuse support contacts. Cognitive style was assessed using the Problem-Solving Inventory (30) and the Automatic Thoughts Questionnaire (31). The Client Service Receipt Inventory (CSRI) (32) - a validated means of collecting data on a wide range of services, including health and social services and the voluntary and complementary sectors, and on the tasks undertaken by informal care givers - was used to estimate the direct costs of depression in the overall sample, drawing on the model proposed by Rice and Miller (33), and to assess the cost effectiveness for problem solving treatment versus control groups.

Follow-up

Each study subject was offered an interview 6 and 12 months after the initial diagnostic interview. These interviews followed a similar protocol to the initial structured interview to allow cross-checking of the possible effect of illness on the initial assessments. At the six month follow-up, the Personality Assessment Schedule (PAS) (34) was used to generate five categories of personality traits, if possible with the involvement of an informant other than the subject. The use of the PAS at this stage offered the best trade off between potentially confounding depressed mood and response rate attrition.

Intervention

Respondents identified as cases of depressive disorders were randomly allocated to one of three groups. A community mental health facilitator (MHF) based in each centre delivered the intervention.

  a. *Individual intervention: Problem Solving Treatment (PST)*. The MHF contacted each subject randomised to this group, described the diagnosis reached during the detailed interview, and offered one-to-one training in individual problem solving. The procedure has the following stages: identifying and clarifying the problem; setting clear achievable goals; brain-storming to generate solutions; selecting a preferred solution; clarifying the steps necessary to implement that solution; and evaluating progress. It involves six treatment sessions over three months, the first 60 minutes, the rest 30 minutes duration (11).
  b. *Group intervention: the Coping with Depression Course (CWD)*. The intervention for subjects randomised to this group was presented by the MHF in a group setting, following the educational model described by Lewinsohn et al (35) and Muñoz and Ying (36), with modifications to increase the content devoted to social support. Within each study site, up to six groups of 6-10 subjects were formed on a locality basis. Each group met for 8 two hour sessions.
  c. *Control group*. No intervention from research team.

Training and quality control

The Diagnostic Interviewers (DIs) were psychiatrists, general practitioners or psychologists. All DIs received an initial weeklong training course at an approved SCAN training centre, and subsequently practised the full diagnostic interview schedule on at least 10 volunteer subjects. Inter-rater reliability over time was monitored by means of assessment and feedback using a standardised videotaped consultation. A videotape including a full SCAN interview was used for this exercise, supplied by the WHO-approved SCAN training centre that trained ODIN's first-phase DIs. Each DI was asked to rate and score the interview, then send his/her score sheets to a central analysis centre (Liverpool). Scores were compared with the 'official' set of ratings which accompanied the video. The videotaped interview contained 113 questions that could be rated, and all 13 of the DIs were included in this exercise. A 100% agreement was reached for overall diagnosis (moderate depressive episode) and for diagnostic category (F32.1). There was 70% inter-rater agreement on scores for individual questions.

The MHFs had qualifications in psychology, nursing and allied health professions. The MHFs providing the individual intervention received an initial two day training session from a team of approved trainers. Each MHF then practised with at least six volunteer subjects. All these sessions were audiotaped with the subjects' permission. Tapes of each second session, together with summaries of the other five sessions and translations if needed, were sent to one of the trainers for feedback. A final training was held in October 1996, during which each MHF's competency to deliver the intervention was assessed. During the trial the quality of the intervention was monitored by continued audiotaping of the study treatment sessions: a random 20% of the tapes of each second session (with translation if needed) were sent to a senior trainer for assessment. Each MHF providing the group intervention participated in an introductory two day course with an experienced trainer. This was followed by running at least one practice group with volunteer subjects. The second session of each group was videotaped and sent to the trainer for assessment and feedback. Quality control during the intervention phase followed a similar pattern.

Field trials

During Autumn 1996 each centre undertook field trials of the screening procedures and research instruments. 318 subjects across the five centres were invited to take part, of whom 172 (54%) agreed to do so. 36 (21%) had BDI scores above threshold. The response rates were highest in Santander, where a completely face-to-face methodology is being employed. Response was lowest in Dublin, where the trial was conducted in a part of the city with extremely high levels of socioeconomic deprivation, and in the rural Norwegian community, where no follow-up was made of trial subjects. The proportion of returned questionnaires successfully completed was uniformly very high. The proportion of subjects scoring at or above BDI threshold was highest in the British and Irish urban areas, and lowest in the British rural area and the Spanish urban area. Following feedback from these trials, modifications were made to methods of following up non-responders, with particular emphasis on techniques for telephone follow-up. The order of the instruments in the screening questionnaire was amended and final decisions were taken about the precise format of the Client Service Receipt Inventory.

Statistical analysis

Epidemiological study

Routine data management and description of the results were carried out using SPSS 7.5 for Windows. Prevalence estimates were carried out using STATA Release 6.0 after allowing for both the two-phase sampling procedure and different response rates across sites through the use of weights (37,38). Information arising from the first-phase screening results and the second-phase sampling mechanism was processed by assigning a 'sampling weight' to each individual subject, given by the inverse of the phase-two sampling fraction.

Randomised controlled trial

Six month and twelve month outcomes were analysed separately. In each case, relevant baseline scores were used as covariates and both Treatment Group and Centre were treated as qualitative factors. Centre effects were treated as either random or fixed. Qualitative outcomes (diagnosis of depression) were analysed using logistic regression. All analyses of treatment effects were carried out using the following procedures from STATA Version 6.0: reg, xtreg (random effects models), logit and xtlogit (random effects models). All analyses were carried out by intention to treat, but with alternative approaches to dealing with the effects of drop-outs (39).

RESULTS

Prevalence estimates

Figure 1 gives the weighted prevalence of depressive disorders (ICD-10 criteria) for survey responders on each site, together with the 95% confidence intervals. An analysis of the combined sample (n= 8,764) gave an overall prevalence of 8.56% (95% CI 7.05-10.37). The figures were 10.05% (95% CI 7.80-12.85) for women and 6.61% (95% CI 4.92-8.83) for men. Rates in Liverpool were more than six times higher, and in Oslo over three times higher, than those in Santander. There was relatively little varia-
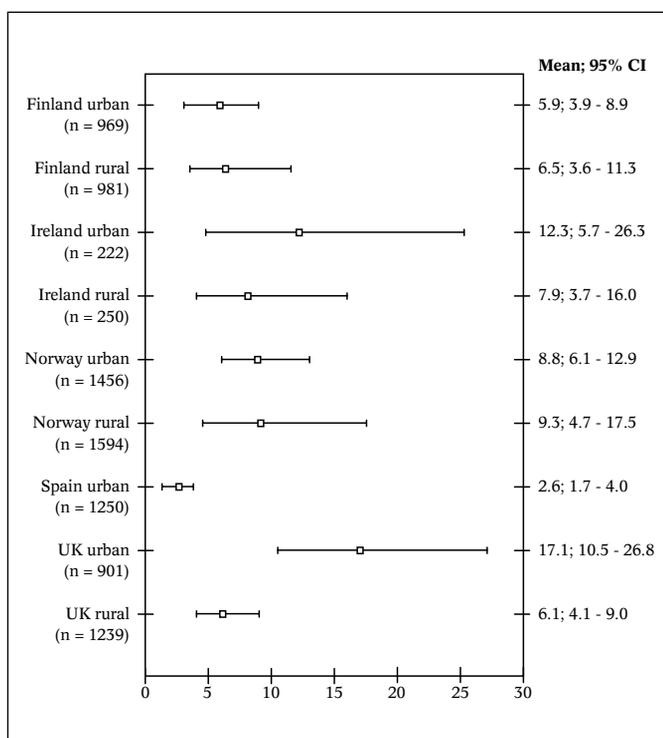
tion among the four rural areas, with weighted prevalence ranging from 6.1% in Wales to 9.3% in rural Norway. In Britain and Ireland, urban rates were two to three times higher than in rural communities, but in Norway and Finland there was little difference between the urban and rural figures (18).

Trial of psychological interventions

Following the diagnostic interviews, 453 subjects with depressive disorders were entered into a randomised controlled trial of the two psychological interventions (PST and CWD). Of these, 128 were randomised to PST, 120 to CWD and 205 to the control group. The trial outcomes are presented in terms of two domains: acceptability and effect on depression diagnosis.

Acceptability

PST subjects were significantly more likely than CWD subjects to complete the intervention offered to them. Eighty three (65%) of subjects randomised to PST completed the intervention, compared with 56 (47%) of those randomised to CWD (chi square, p=0.0059). There was little difference in the proportions of subjects discontinuing each intervention, once started. However, subjects were significantly more likely to refuse CWD than PST initially: 39% vs. 17%, chi square p=0.0002.

Effect on depression

SCAN data for caseness, on an intention to treat basis, showed that both PST and CWD subjects were less likely than controls to be cases at 6 months. Amongst PST subjects, 39/97 (40%) were still cases at six months, compared with 36/82 (44%) of CWD subjects and 92/164 (56%) of controls. On chi square, differences between PST and controls achieved conventional levels of significance (p=0.0216), whereas those between CWD and controls did not (p=0.1065). At 12 months, the proportion of PST subjects who were still cases was unchanged: 34/85 (40%). The proportion of CWD cases at 12 months had increased to 43/78 (55%), while the proportion of control cases had further reduced to 66/150 (44%). On chi square, the difference between PST and CWD at 12 months approached conventional levels of significance (p=0.075).

A logistic regression was performed to obtain estimates of treatment effects on the diagnosis of depression, using three computational methods: first with centre effects random; second with centre effects fixed; and third with observations weighted to compensate for missing data. Using odds ratios with 95% confidence limits, at six months the first method shows a significant treatment effect for PST alone, the second method shows a significant effect for both PST and CWD, and the third method shows a significant effect for CWD alone. At twelve months, none of these methods show any differences between the two interventions and controls.

	Mean; 95% CI
Finland urban (n = 969)	5.9; 3.9 - 8.9
Finland rural (n = 981)	6.5; 3.6 - 11.3
Ireland urban (n = 222)	12.3; 5.7 - 26.3
Ireland rural (n = 250)	7.9; 3.7 - 16.0
Norway urban (n = 1456)	8.8; 6.1 - 12.9
Norway rural (n = 1594)	9.3; 4.7 - 17.5
Spain urban (n = 1250)	2.6; 1.7 - 4.0
UK urban (n = 901)	17.1; 10.5 - 26.8
UK rural (n = 1239)	6.1; 4.1 - 9.0

Figure 1 ODIN prevalence of depressive disorders in participating centres: diagnostic cases for men and woman (95% confidence intervals) (from Ayuso-Mateos et al [18]).

DISCUSSION

One of the findings of the present study is the wide difference in the prevalence of depressive disorders across the study sites and between urban and rural centres. Taking the genders together, the centres fall into three categories: high prevalence (urban Ireland and urban UK, 12.3% and 17.1% respectively), low prevalence (urban Spain: 2.6%) and medium prevalence (the rest of the sites: 5.9-9.3%). The study found high proportions of depression among survey responders in some centres, particularly among the female population in urban areas. At seven of the nine study sites, the prevalence of depressive disorders was higher among women than among men, confirming the results of several previous studies (40,41). Over the last few decades, there has been growing evidence of significant inter-gender differences in the rates of specific mental disorders (2). A variety of social and medical factors have been considered in an attempt to explain the higher rate of depressive disorders in women (1,8,41). Further analysis of the data collected in the epidemiological arm of the ODIN study will enable us to test whether some of the gender differences in the depressive disorders prevalence estimates across sites could be explained by different levels of exposure to life events and other social factors.

The apparent variation in prevalence of depressive disorders between the nine centres needs careful assessment. The methodological decision to offer diagnostic interviews to only a 5% sample of subjects below BDI cut-off, led to considerable higher standard errors (and hence wider confidence intervals), than would have been the case if a larger proportion of BDI-negative subjects had been included in the second phase of the community survey. Secondly, there is evidence of systematic differences between survey responders and the populations from which they were drawn. Responders were more likely to be female, and older, than non-responders. Both of these factors may have introduced a bias towards higher prevalence rates amongst responders than amongst the survey populations. This trend may have been compounded in the British sites and in Dublin, where the primary care samples were older than their corresponding census populations. Conversely, the tendency for socio-economically deprived subjects to be less likely to respond - demonstrated for the Liverpool sample - may have introduced a bias towards lower rates of depression than in corresponding community as a whole.

Further analysis of the ODIN sample will enable us to study to what extent urban/rural differences in the prevalence of depressive disorders may be related to differential exposure to life events or differential levels of social support networks, as has been recently proposed (42). In addition, we are currently working on analyses of health care utilisation patterns, in relation to the initial sample and to the interventions, that will provide valuable information on the current treatment coverage for these conditions and its impact on the proposed interventions.

Reasons for apparent differences in acceptability between PST and CWD need to be explored further. The decision to offer different interventions in different sites may have introduced within-study biases, such as differential activity between research teams in organising therapeutic events, or persuading subjects to participate. However in Liverpool, the only site where both interventions were offered, the refusal rates between PST and CWD were markedly different. The ability to provide PST in subjects' homes, whereas CWD subjects had to travel to an alternative venue, may also have reduced the likelihood of participation amongst depressed subjects, who have intrinsically lowered motivation as a consequence of their condition. There were greater time delays in organising group events, which can decrease motivation further. Finally, depressed subjects may feel embarrassed or stigmatised by their condition, and consequently be less inclined to participate in public group activity than a private individual treatment process.

We conclude that PST and CWD may be recommended as effective interventions for people with depressive conditions in urban and rural community settings, on the basis that, at least in the short term, they reduce the severity and duration of depressive disorders, and improve subjective mental and social functioning. Our results should influence the focus of psychological services in primary care, by emphasising the benefits of treatments which are specific, brief, easy to learn and simple to implement. This may have specific implications for the training and employment of practice counsellors. Our findings should also encourage a broader vision for mental health strategies within the general population, providing effective help for people who may previously have been excluded from health care services.

Appendix

Acknowledgements

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The UK700 trial of Intensive Case Management: an overview and discussion

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Appendix

The severely mentally ill are at significant risk of neglect in large cities, where the prevalence of psychosis is high and services can be fragmented. Case management has been proposed as the service model of choice for this group of patients for some time. Case management arose, and has been chiefly researched, in the USA in response to deinstitutionalisation (1) and its procedures have been well described. An initially co-ordinating (brokerage) approach has been replaced with a practice combining direct patient care plus co-ordination (clinical case management) which requires clinically trained staff (2).

Assertive Community Treatment (ACT) is a particular form of case management which emphasises small case loads, comprehensive care and active outreach to the patient's home and neighbourhood. The relationship of Intensive Case Management (ICM), the term favoured in European studies, to ACT is close but somewhat ambiguous. Stein and Test's landmark study (3), convincingly replicated in Australia (4), demonstrated major advantages, both in clinical and social outcome for patients and in terms of reducing hospitalisation and costs. As a consequence the approach has spread rapidly and generated an extensive research literature into the varied forms of case management (5-7).

These research findings are, however, mixed. Overall, case management improves engagement with patients, but evidence for the reduction of hospitalisation rates appears restricted to ACT. Even here the evidence of superiority fades with time and is strikingly absent in European studies (2). Criticisms of this research highlight the lack of scientific rigour in many studies, in particular 'black-box' studies where the effective components are unclear and studies where bias from local enthusiasm and atypical service conditions are not minimised (8).

Four main themes emerge from the literature (9): a) the commonest outcome measure is reduced hospitalisation; b) patients with severe psychotic illness are the target group; c) a restricted case load of <15 patients per case manager is recommended; d) follow-up of over a year is needed to observe impact.

METHODS

We conducted a trial where only one key variable (caseload size) distinguished the experimental and control conditions. This is routine practice in most medical research, but uncommon in mental health services research. We chose caseload size because this could be precisely determined and is believed to be central to outcome. A multi-centre trial meant that we would have adequate power to test our hypotheses, analyse subgroups and evaluate predictors of outcome. It also helped avoid biases common in these studies (8). We took hospitalisation over two years as the primary outcome, because of its place in the literature and significance for service planning. Randomisation, equally to ICM (caseload 1:12-15) or Standard Case Management (SCM, caseload 1:30-35) was conducted blindly and independently and was stratified for point of recruitment (inpatient or outpatient) and for ethnicity (black Afro-Caribbean or other). The data analytical strategy was determined a priori and strictly adhered to.

We tested the hypotheses that ICM would: a) reduce hospitalisation and overall costs compared to SCM; b) produce better outcomes and lower costs in severely, but not moderately, disabled patients; c) produce greater outcome differences in Afro-Caribbean patients than other ethnic groups.

Inclusion criteria for patients were: a) aged 16-65; b) psychosis defined by Research Diagnostic Criteria; c) hospitalised at least twice, most recent in preceding 2 years; d) one third of the sample Afro-Caribbean; e) not suffering from primary substance abuse or organic brain damage; f) not already involved in specific or specialised case management programme.

Staff in both arms of the trial were equally well trained and of equal seniority, and all received an introduction to the study (10). The ICM staff also received a further day's training in ICM from a leading US practitioner. Patients were required to remain with the treatment arm to which they were randomised unless there were serious, overwhelming clinical reasons. Detailed recording of treatment was carried out throughout the study (11).

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RESULTS

708 subjects were recruited (57% male; mean age 38 yrs). 87% had a diagnosis of schizophrenia or schizoaffective disorder. Only 35% were living with families. There were no significant baseline differences between the experimental and control groups, although there was some overall variation between the four sites (12). 610 patients (86%) were interviewed at 2 years and hospitalisation data were available for 679 (Figure 1).

Table 1 shows that there were no differences in hospitalisation rates between the two conditions, each group spending a mean of just over 73 days in hospital over these two years. There were no significant interactions based on site, ethnicity or level of baseline disability (10). Afro-Caribbean patients spent exactly the same proportion of time as inpatients as did the mainly white group (a mean of just over 72 days). More severely socially disabled patients did appear to spend more time in hospital and there is just a suggestion that ICM may have more impact, but the differences are small and statistically insignificant with wide confidence intervals. A very detailed economic analysis (13) found no significant cost differences between the two treatment arms. Overall costs were driven substantially by inpatient care and, although there were extra costs incurred for the smaller caseloads for ICM, these were partially balanced by increased costs in social care. The variation in costs for individual patients was very great, reducing the possibility of identifying statistically significant differences.

Despite a comprehensive assessment of a wide range of clinical status, social functioning, needs for care and quality of life data, no differences were found between the two groups (10). Deaths (9 suicides, one homicide and 6 natural causes) were equally distributed. Surprisingly, more patients were lost to care in ICM (46 vs. 27, p=0.02). The study was an opportunity to characterise treatment patterns in detail and this confirmed that the rate of contact in ICM was double that in SCM: 3.35 vs. 1.46 face to face contacts per 30 days, a difference of 1.9 (p<0.001, 95% CI 1.5, 2.29) (11).
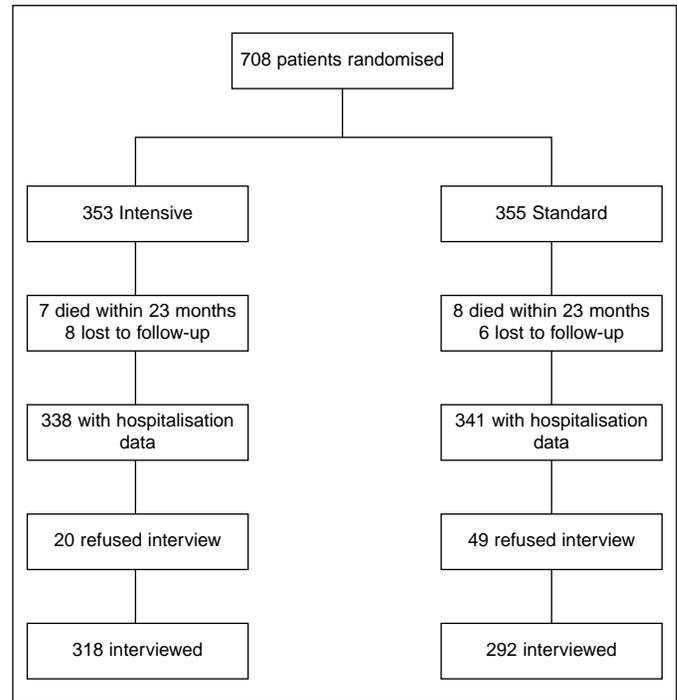

Figure 1 UK700 trial profile

Table 1 Days in hospital over 2 years in patients receiving Intensive vs. Standard Case Management

| | Intensive | Standard | Difference (Intensive-Standard) | | |
	(n=353)	(n=355)	Estimate	95% CI	p value
Missing data*	15 (4.3%)	14 (3.9%)			
Mean days in hospital (SD)	73.5 (124.2)	73.1 (111.2)	0.4	-17.4 18.1	0.97
Centre[1]					
St. George's (n=189)	73.9	63.4	10.5	-22.3 -43.3	
Manchester (n=151)	78.9	59.4	19.5	-19.6 58.7	
St. Mary's (n=189)	65.7	90.9	-25.3	-59.5 9.0	
King's (n=150)	76.7	75.8	0.9	-36.9 38.7	
Ethnicity[2]					
Afro-Caribbean (n=194)	72.3	72.3	-0.1	-30.6 30.5	
Other (n=485)	74.0	73.4	0.6	-21.2 22.3	
Severity (DAS total)[3]					
<1 (moderate) (n=306)	67.9	66.9	1.0	-25.9 27.9	
≥1 (severe) (n=363)	75.1	81.0	-5.9	-30.1 18.3	
Median days in hospital	17.5	28.0	10.5	-22.0 2.0	0.16
Any time in hospital	210 (62.1%)	228 (66.9%)	-4.7%	-11.9% 2.5%	0.20

* Missing data: 15 deaths before 23 months and 14 lost to follow-up (see Figure 1)
DAS: Disability Assessment Schedule
[1] Test of common difference for all centres: P=0.31; [2] Test of common difference for both ethnic groups: P=0.98; [3] Test of common difference for both levels of severity: P=0.69

DISCUSSION

Criticisms of the trial

The failure of caseload size to impact at all on hospitalisation or on clinical and social functioning was initially very unexpected, given both the literature in this area and current political and professional assumptions (14). Not surprisingly it has caused considerable controversy (15-19). There were two main criticisms. The first was that there were no differences at all in process of care between the two arms - staff in ICM had simply carried on as before. The second was that we had tested an ineffectual model of care. This second criticism reflects the belief that ACT and ICM are qualitatively different and only ACT would make a difference (20). ACT, so this criticism goes, is an 'all or nothing' approach and individual components are not exportable. Both these criticisms are important ones and need to be taken seriously.

Detailed prospective recording convincingly dispels the first criticism (11). ICM patients did have higher levels of care and this did encompass a broad range of social as well as medical interventions (although the proportion of the former was low). That something different was happening (even if it failed to produce significant differences in our initial hypotheses) is confirmed by a post-hoc analysis demonstrating that trial subjects with psychosis and borderline intelligence did have reduced hospitalisation in ICM (21).

The second criticism, that only ACT in pure form makes a difference, is pervasive and requires detailed attention. From a scientific perspective, we would argue that such a position is a belief and not knowledge. The history of medicine is littered with such beliefs that have subsequently proved to be unfounded when the effective ingredients of treatments have been isolated. Our approach in the UK700 trial, however, is not the most powerful way to examine this criticism. That would be to find two functioning ACT teams (preferably groups of teams) and alter one component within one of them and observe the outcome. Such studies are highly improbable, so we would argue that testing the individual parameters which are thought to be responsible for efficacy in the ACT approach has still to be pursued. After all, the configuration of ACT teams did not evolve from painstaking scientific enquiry but is simply based on Stein and Test's study. Even if synergy were of such importance, this would predict a reduced impact, not an absent one. Such a proposed synergistic configuration should be based on theory, with implications that could then be described and then tested. This is currently not the case.

Alternative explanations for the similar outcomes in the two arms

Closer attention to the literature suggests that the large differences in hospitalisation demonstrated by earlier US and Australian studies are no longer being achieved (5,22,23). Increasingly the 'defining characteristics' of ACT in earlier studies are to be found in the control services against which they are compared. What were once the experimental services (e.g. case management, community support teams) in such studies are now often the controls (24). In a systematic review by Catty et al (24), it becomes clear that studies that have community mental health services as their controls achieve much less reduction in hospitalisation rates than (often earlier) studies where the control was based on hospital care. With community-based control services, the mean reduction was only 0.5 days hospitalisation a month versus 6 days when the control was hospital based - a twelve-fold difference. Improvements in standard community services and gradually reducing lengths of stay have profoundly altered the possibilities for significantly reducing hospitalisation in the severely mentally ill.

A possible alternative approach to resolving this ongoing uncertainty is to ignore the designation of the service and to examine the impact of individual components. In the review by Catty et al (24), individual components of experimental and control services (obtained from the authors) were tested for associations with reduction in hospitalisation. Significant associations were found only for 'joint health and social care' and 'regularly visiting at home'. Caseload size and a number of other 'key variables' failed to correlate with a reduction. These variables may be more suitable candidates for further consideration and perhaps rigorous randomized controlled trials than some of the structural features usually proposed in this area.

CONCLUSIONS

The UK700 trial has been an ambitious attempt to introduce the scientific rigour associated with most other medical research (e.g., adequately powered, single variable tested, strict attention to controlling for bias and a clearly articulated analytical plan) to mental health services research. It proposed three main hypotheses about the benefits for psychotic patients of reducing caseload size, and none was supported by the results. It highlights for researchers the problems inherent in smaller or less rigorous trials, and points the way to either further large-scale trials or second generation case management trials with more carefully argued questions and outcome measures.

Collaboration across four sites led to increased clarity about measures and questions, and proved an essential check on dogma and over-enthusiasm. It also resulted in a rich database about these patients and their treatment that has permitted the subsequent examination of several questions. Less rigorously designed trials in this area (particularly small head-to-head studies) are unlikely to move our understanding on. Our conclusion is that currently, in well-coordinated mental health services, simply reducing the caseload does not improve outcome for these patients. Mental health planners may need to pay more attention to the content of treatment rather than changes in service configurations.

Appendix

The UK700 Group is a collaborative study team involving four clinical centres: Manchester Royal Infirmary (Tom Butler, Francis Creed, Janelle Fraser, Peter Huxley, Nick Tarrier, Theresa Tattan); King's College and Maudsley Hospitals, London (Tom Fahy, Catherine Gilvarry, Kwame McKenzie, Robin Murray, Jim van Os, Elizabeth Walsh); St. Mary's and St. Charles' Hospitals, London (John Green, Anna Higgitt, Elizabeth van Horn, Donal Leddy, Patricia Thornton, Peter Tyrer); St. George's Hospital, London (Rob Bale, Tom Burns, Matthew Fiander, Kate Harvey, Andy Kent, Chiara Samele); Health Economics Centre, York (Sarah Byford, David Torgerson, Ken Wright); Statistical Centre, London (Simon Thompson, Ian White).

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Mental health of refugees: the case of Albania

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The war in Kosova, as shown by the media, started in March 1999, but a 'hidden' war was going on since the period September-October 1998. That was the time of the first expulsion of Albanian people from Kosova: 3500-4000 refugees settled in villages of Albania. Most of them had been exposed to such atrocities as systematic rape; torture; systematic killing of men; forced separation from family members; disappearance of male family members; witnessing of shelling and killing of relatives and others; plundering, burning or destruction of property and land; and the destruction of their social and cultural community.

We carried out a study assessing the prevalence of post-traumatic stress disorder (PTSD) in a sample of 840 Kosova refugees who settled in a village of Albania during the autumn/winter period 1998/1999. They were 392 males and 448 females within the age range of 14-81 years. They were approached by a postgraduate resident in psychiatry and a non-professional worker (herself a refugee) by the outreach method, and gave their informed consent to be interviewed. No inclusion criteria were used except for the age range. Data collection was made during a three-month period (Spring 1999) and was concluded just before the massive displacement of Kosova people occurring during that year.

We recorded war-related trauma exposure by an ad-hoc questionnaire. The occurrence of PTSD was tested by the Penn Inventory for Post-traumatic Stress Disorder (1). This is a 26-item scale detecting the re-experiencing, avoidance and arousal symptomatology required by the DSM-III-R criteria for PTSD, which has been found to be quite reliable in terms of both internal consistency (alpha=0.94) and stability over a 5-day interval (r=0.96). Using a score of 35 as the cut-off, the scale has showed a sensitivity of 0.90 and a specificity of 1.0 (2). The scale was translated into Albanian by a senior psychiatrist, and the translation was approved by a group of mental health experts. It is normally a self-administered interview, but since many of our refugees were not accostumed to "papers", in our study the scale was administered by a group of trained professionals and para-professionals.

Physical torture through beating using mili-

tary means was reported by 50.5% of the interviewed people; destruction of property by 79.2%; robbing by 19%; imprisoning by 17.2%; killing of a loved one by 49%; sexual violence by 2.2% (information given in the standard interview); disappearance of a family member by 32.6%. 14% of the interviewed people had been seriously injured.

Using the cut-off score of 35 of the above-mentioned scale, the prevalence of PTSD was 59%. It was 66.5% in women and 50.2% in men. The prevalence according to age groups was the following: 14-25 years of age: 47.6%; 26-45 years: 61.1%; 46-65 years: 67.9%; above 65 years: 76.9%.

These data are difficult to compare with those available in the literature. In a study of Croatian prisoners of war tortured in Serbian detemption camps, the prevalence of PTSD was 34% (3). On the other hand, a recent study of Bosnian refugees resettled in the United States reports a prevalence of 65% (4). It is important to emphasize that our sample consisted of people who survived a polyvalent traumatic situation, but who where still 'within' the trauma, since the 'real' war and the massive expulsion of Kosova inhabitants were just coming.

Despite the extent of the traumatic event and the enormous psychological distress, we have observed tremendous courage and fight for survival in this population. After the NATO declared Kosova as a place without war, the displaced persons massively started returning to their homes, despite the persistent claims by the international community that the place was not safe enough. In less than one month, around 1 million of them came back home in search for their lost identity and social status. Reports from the after-war period show that their adaptation abilities were high, although no information is available on their mental health status.

The exodus and the period of stay of Kosova people in Albania caused a change in the perception of mental health issues in this country: in a very short time the media were filled with comments and ideas (although very often superficial and simplistic) on possible assistance to this vulnerable group, as it never happened in the past. As a consequence, the social and state

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structures became more open to mental health problems in general and the atmosphere became more favorable to the reform needed in the mental health care system.

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Suicide and psychiatric diagnosis: a worldwide perspective

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The World Health Organization (WHO) compiles and disseminates data on mortality and morbidity reported by its Member States, according to one of its mandates. Since the WHO's inception in 1948, the number of Member States has grown continually and so has the WHO mortality data bank. From 11 countries reporting data on mortality in 1950, the number of countries involved increased to 74 in the year 1985. More than 100 Member States reported on mortality at some point in time.

Data from developed countries (mostly in the North of Europe and of America, and a few countries of the Western Pacific Region) are received on a mostly regular basis. Most developing countries (in Latin America, Asia and in the Eastern Mediterranean Region) report on an irregular basis; very few countries in Africa regularly report on mortality to WHO.

Deaths associated with suicide are an integral part of the WHO mortality data bank. Throughout consecutive editions of the International Classification of Diseases (ICD-6 to ICD-10), the category name and code of suicide have remained relatively stable. Suicide data are reported in absolute numbers along with the mid-year population of a country. The suicide rates are usually represented by country, year, sex, and age group. The most recent data available to the WHO can be accessed through its web site (www.who.int).

The official figures made available to WHO by its Member States are based on death certificates signed by legally authorized personnel, usually doctors and, to a lesser extent, police officers. Generally speaking, these professionals do not misrepresent the information. However, suicide may be hidden and underreported for several reasons, e.g. as a result of prevailing social or religious attitudes. In some places, it is believed that suicide is underreported by a percentage between 20% and 100%. This underlines the importance of bringing about corrections and improvement on a world wide basis.

In contrast to data on completed suicide, no country in the world reports to WHO official statistics on attempted suicide (and most probably countries do not collect them), which makes it impossible to relate national trends of suicide to national trends of attempted suicide. In the absence of national data, one is forced to rely on local studies, which vary considerably, for instance in terms of the operational definition of attempted suicide. The WHO/EURO Multicentre Study on Suicidal Behaviour (1) constitutes a major step forward in this area.

EPIDEMIOLOGICAL CONSIDERATIONS

According to calculations based on data reported to WHO by its Member States, in 1998 suicide represented 1.8% of the global burden of disease and it is expected to increase to 2.4% by the year 2020. Suicide is among the 10 leading causes of death for all ages in most of the countries for which information is available. In some countries, it is among the top three causes of death for people aged 15-34 years.

In the year 2020, approximately 1.53 million people will die from suicide based on current trends and according to WHO estimates. Ten to 20 times more people will attempt suicide worldwide (2). This represents on average one death every 20 seconds and one attempt every 1-2 seconds.

The highest suicide rates for both men and women are found in Europe, more particularly in Eastern Europe, in a group of countries that share similar historical and sociocultural characteristics, such as Estonia, Latvia, Lithuania and, to a lesser extent, Finland, Hungary and the Russian Federation. Nevertheless, some similarly high rates are found in countries that are quite distinct in relation to these characteristics, such as Sri Lanka and Cuba.

According to the WHO regional distribution, the lowest rates as a whole are found in the Eastern Mediterranean Region, which comprises mostly countries that follow Islamic traditions; this is also true of some Central Asian republics that had formerly been integrated into the Soviet Union. Curiously enough, when the data are separated by WHO region, the highest rates in each region, with the exception of Europe, are

found in island countries, such as Cuba, Japan, Mauritius and Sri Lanka.

In Figure 1, global suicide rates (per 100,000 population) have been calculated starting from 1950. Deaths reported by countries in each year were averaged and projected in relation to the global population over 5 years of age at each respective year. An increase of approximately 49% for suicide rates in males and 33% for suicide rates in females can be observed between 1950 and 1995.

The increase in these global suicide rates must be interpreted with caution. On the one hand, it might reflect the fact that since the end of the USSR (which had an overall rate below the average), some of its former republics (particularly those with the highest rates in the world) started to report individually, thus inflating the global rate. On the other hand, figures for 1950 were based on 11 countries only, and this gradually increased up to 1995, when the estimates were based on 62 countries that reported on suicide. These 62 countries as a whole probably have higher rates, are more concerned with them and have a higher tendency to report on suicide mortality than countries where suicide is not perceived as a major public health problem.

Although it is customary in the suicidology literature to present total rates of suicide for both men and women combined, it should be noted that the current general epidemiological practice is to present rates according to sex and age, particularly when important differences (in terms of figures or risk factors) across sex or age groups exist. This is precisely the situation in relation to suicide; suicide rates of men and women are consistently different in most places, as are rates in different age groups.

Figure 1 also highlights the relatively constant predominance of suicide rates in males over suicide rates in females: 3.2:1 in 1950, 3.6:1 in 1995 and 3.9:1 in 2020. There is only one exception (China), where suicide rates in females are consistently higher than suicide rates in males, particularly in rural areas (3).
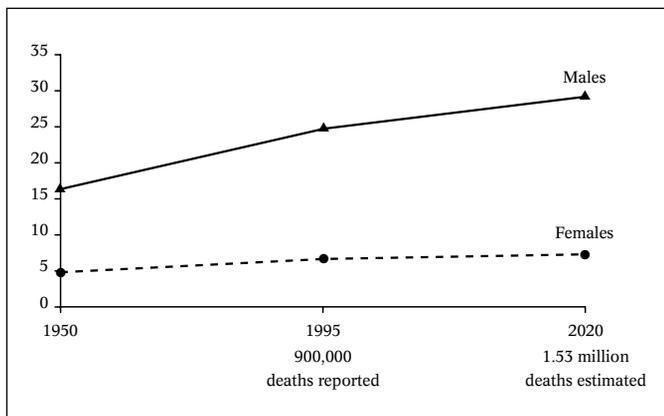
There is a clear tendency for suicide rates to increase with age (Figure 2). By comparison with a global suicide rate of 26.9 deaths per 100,000 for men in 1998, the rates for specific age groups start at 1.2 (in the age group 5-14 years) and gradually increase up to 55.7 (in the age group over 75 years). The same positive relationship between age and suicide rates is observed in females: for an overall rate of 8.2 in 1998, specific age group rates grow from 0.5 per 100,000 (in the age group 5-14 years) to 18.8 (in the age group over 75 years).

In spite of the wide and appropriate use of rates, the information conveyed by them alone can be misleading, particularly when comparing data across countries or regions with important differences in the demographic structure. As indicated earlier, the highest suicide rates are currently reported in Eastern Europe; however, the largest numbers of suicides are found in Asia. Given the size of their population, almost 30% of all cases of suicide worldwide are committed in China and India alone, although the suicide rate of China practically coincides with the global average and that of India is almost half of the global suicide rate. The number of suicides in China alone is 30% greater than the total number of suicides in the whole of Europe, and the number of suicides in India alone (the second highest) is equivalent to those in the four European countries with the highest number of suicides together (Russia, Germany, France and Ukraine).

Given the relatively narrow differences in the population of males and females in each age group, the large predominance of suicide rates among males is also found in relation to the actual number of suicides committed.

It is in relation to age, however, that the most striking changes are perceived when we move from rates to total numbers. Although suicide rates can be between six and eight times higher among the elderly, as compared with young people, currently more young people than elderly people are dying from suicide, globally speaking. Currently, more suicides (55%) are committed by people aged 5-44
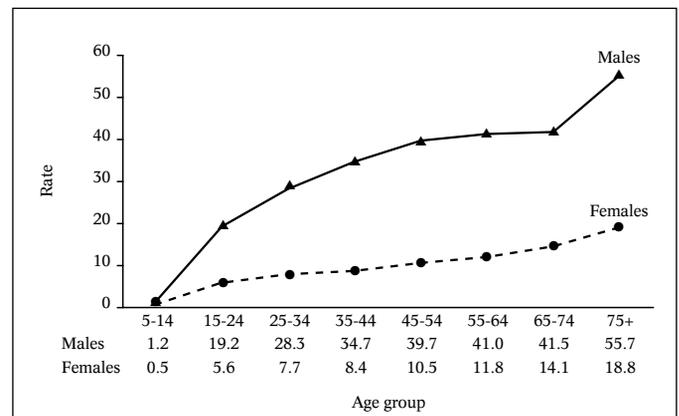

Figure 1 Global suicide rates since 1950 and projected trends until 2020

	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Males	1.2	19.2	28.3	34.7	39.7	41.0	41.5	55.7
Females	0.5	5.6	7.7	8.4	10.5	11.8	14.1	18.8

Figure 2 Distribution of suicide rates (per 100,000) by gender and age, 1998
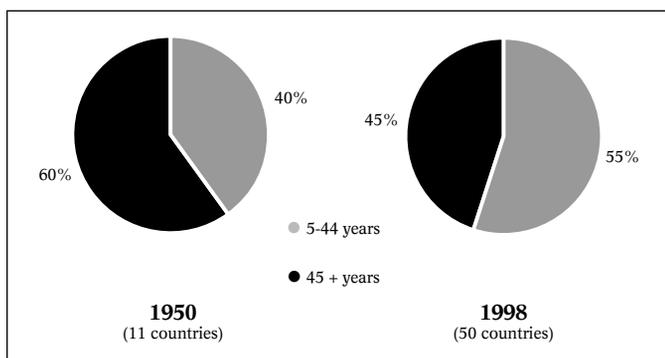
Figure 3 Changes in the age distribution of cases of suicide between 1950 and 1998

years than by people aged 45 years and older (Figure 3). Accordingly, the age group in which most suicides are currently completed is 35-44 years for both men and women.

This shift in the predominance of numbers of suicide from the elderly to young people is a new phenomenon. It becomes dramatic when one considers that the proportion of the elderly in the total population is increasing at a greater rate than the one of younger people. Also, it is not the result of a divergent modification in suicide rates in these age groups: the suicide rate in young people is increasing at a greater pace than it is in the elderly.

SUICIDE AND MENTAL DISORDERS

The presence of a mental disorder is an important risk factor for suicide. It is generally acknowledged that over 90% of those who committed suicide had a psychiatric diagnosis at the time of death.

In order to discuss the implications of psychiatric diagnosis for suicide prevention, we have undertaken a systematic review of studies reporting diagnoses of mental disorders. Preliminary findings are to be found elsewhere (4,5).

The review included 31 papers, published between 1959 and 2001 world wide. In total, 15,629 cases of suicide in the general population (above the age of 10 years, both sexes) were identified. Papers focusing only on specific age groups, such as young people or the elderly, or only on specific disorders, such as depression or schizophrenia, were excluded; usually these studies included a rather small sample size. All studies retained refer to people with or without history of admission to mental hospitals (47.5% versus 52.5%, respectively). The diagnostic methods included both diagnoses established while the person was still alive and post-mortem diagnoses based on e.g. psychological autopsies (6). All diagnoses of mental disorders were made on the basis of ICD (8, 9 or 10) or DSM (III, III-R or IV) and converted to general categories common to both systems.

It is noteworthy that the geographical and cultural representation of the cases was limited, since 82.1% of the cases originated from Europe and North America, whereas cases of Asian countries (including Australia and New Zealand) constituted the remaining part.

The overall results showed that 98% of those who committed suicide had a diagnosable mental disorder, and in this paper we will concentrate on the differences between the psychiatric diagnoses of general populations and of populations which had been admitted to mental hospitals. Out of the 15,629 cases reviewed, 7,424 cases (47.5%) had been admitted at least once to a psychiatric hospital or ward (heretofore designated as PIP), whereas there was no indication of this type of admission in 8,205 cases (52.5%), heretofore designated as GP.

Table 1 shows the distribution of the diagnoses found in all cases. It should be noted that in some studies on GP (but in none on PIP) multiple diagnoses were established, thus making the number of diagnoses greater than the number of cases.

Unsurprisingly, a psychiatric diagnosis was made in the majority of people who committed suicide; in 3.2% of the

Table 1 Diagnoses of mental disorders in cases of suicide in psychiatric inpatient and general populations

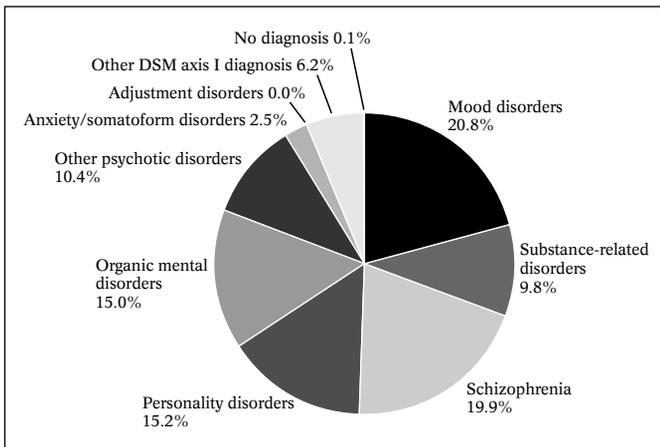| Disorder | Psychiatric inpatient population | | General population | |
| | One diagnosis (7424 cases) | | One and multiple diagnoses (8205 cases) | |
	Diagnoses	%	Diagnoses	%
Mood disorders	1545	20.8	4405	35.8
Substance-related disorders	725	9.8	2754	22.4
Schizophrenia	1481	19.9	1306	10.6
Personality disorders	1129	15.2	1432	11.6
Organic mental disorders	1115	15.0	128	1.0
Other psychotic disorders	769	10.4	43	0.3
Anxiety/somatoform disorders	187	2.5	755	6.1
Adjustment disorder	3	0.0	448	3.6
Other DSM axis I diagnosis	460	6.2	633	5.1
No diagnosis	130	0.1	388	3.2
Total	7424	100.0	12292	100.0

Figure 4 Suicide and mental disorders: distribution of diagnoses in studies with psychiatric inpatients
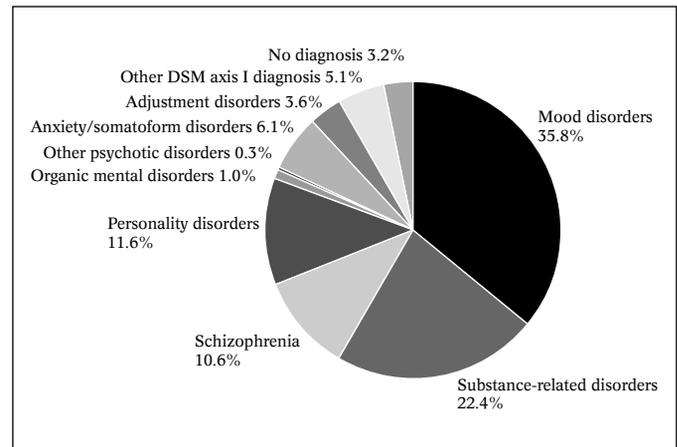

Figure 5 Suicide and mental disorders: distribution of diagnoses in studies with general population

cases of GP and in 0.1% of PIP a psychiatric diagnosis was not established, which leaves it open whether there were no good conditions or information for the establishment of a psychiatric diagnosis or whether the person did not actually have a diagnosable mental disorder.

Apart from the predominance of mood disorders in both groups (however, with an important difference between them), there are major differences in the prevalence of psychiatric diagnoses across these two groups, as highlighted below (Figures 4 and 5):

- Mood disorders (actually, depression, since a minority of cases of mania was identified in association with suicide) were the most frequently found mental disorders in both types of populations; however, it amounted to 20.8% of PIP and 35.8% of GP, a much smaller percentage than what is currently held.
- Schizophrenia is the second most frequent diagnosis in the PIP (19.9%), but only the fourth in GP (10.6%).
- Substance-related disorders (actually, alcohol-related disorders, in the vast majority of the cases) was the second most frequent diagnosis in GP (22.4%) but only the sixth in PIP (9.8%).
- Personality disorders were third both in PIP (15.2%, a percentage quite similar to organic mental disorders) and in GP (11.6%).
- Both organic mental disorders and other psychotic disorders each represented more than 10% of all diagnoses in PIP (15% and 10.4%, respectively), but were below 1% in GP (1% and 0.3%, respectively).
- All other individual disorders represented less that 5% of all diagnoses, with the exception of anxiety/somatoform disorders in GP (6.1%, but only 2.5% in PIP).
- The combination of the two major psychotic disorders (schizophrenia and other psychotic disorders) in PIP amounts to 30.3% of all cases, which is 50% higher than mood disorders, in this group. If we transfer the

few cases of mania from mood disorders into psychotic disorders, this gap is further increased.
- The comorbidity of mood disorders with substance-related disorders (in practice, depression and alcoholism) was the most frequently found by those GP studies that recorded multiple diagnoses (all PIP studies gave only one main diagnosis).

IMPLICATIONS FOR PREVENTION

The data presented above clearly point out the appropriateness of the treatment of mental disorders as a major component of suicide prevention programmes. However, on the one hand, suicide is found associated with a variety of mental disorders, each one of them with a different therapeutic approach, thus making a 'blanket approach' probably unsound. On the other hand, no single mental disorder is found in association with suicide with such a magnitude as to have any significant impact in national suicide rates, should its treatment be even at an impossible 100% of effectiveness.

Although the data presented here included all the studies found in the whole scientific literature in English, through the methodology described earlier on, more than 80% of the cases come from three countries only, namely Denmark, UK and USA. It is quite possible that a different diagnostic distribution be found in other countries or regions. Actually, there are indications that in the Baltic region alcohol-related disorders have a stronger association with suicide than in other regions (7) and that in Asia less suicides are associated with depression, in comparison with Western countries (8,9). According to these authors, in Asian countries there are more suicides of the impulsive type, committed within hours of the triggering factor, than what is usually seen in industrialized countries.

Therefore, a sound suicide prevention strategy should definitely include the treatment of the disorders most fre-

quently associated with suicide, on a local basis. In the absence of the relevant information, it should include the treatment of at least schizophrenia, depression and alcohol-related disorders as a main component, but should not overlook other components more dependent on the social and physical environment, as proposed by the WHO human-ecological approach (10).

According to this approach, other actions to prevent suicide include:

- Control of the availability of toxic substances and medicines;
- Detoxification of domestic gas and car emissions;
- Restricted access to guns;
- Responsible media reporting about suicide;
- Erection of barriers to deter jumping from high places.

At any rate, suicide remains a major public health problem, nevertheless preventable, and action for its prevention calls for a coordinated multisectoral approach. In view of the close association between suicide and mental disorders, psychiatrists are in a particularly strategic position to lead effective suicide prevention programmes.

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Usefulness and limitations of treatment guidelines in psychiatry

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The second half of the 20th century witnessed great advances in our understanding of the epidemiology and etiologies of mental illnesses. Much has also been learned about the efficacy and effectiveness of various treatments - somatic, psychotherapeutic and social. A significant challenge for psychiatry, as for all of medicine, is the incorporation of this new knowledge into the daily work of clinicians. One approach to increase the use of evidence-based treatments is the development and implementation of practice guidelines. Practice guidelines may be defined as strategies for the care of patients developed to assist clinicians in their decision making.

Guidelines for the care of patients have existed for centuries. However, the recommendations in these guidelines were generally not supported by evidence, the process used in their development was not documented and there was no formal review or revision process identified. Over the last two decades, there has been an explosion in the number of practice guidelines developed in medicine. Guidelines have been developed by professional associations, by government agencies, by insurance companies and other third party payors, and by providers of care. The processes used in developing these guidelines vary widely. Some are evidencebased, some reflect a consensus of experts, while others are the opinions of one or more authors. In 1990, the Institute of Medicine published a monograph describing the elements of 'good' guidelines (1).

In 1988, the American Medical Association organized a Practice Guideline Partnership comprised of 14 specialty organizations including the American Psychiatric Association (APA). This partnership also defined 'good' guidelines and identified 5 criteria that such guidelines possess. They: a) are developed by physicians in active clinical practice; b) integrate relevant research and clinical expertise; c) describe specific treatment approaches, including indicators, efficacy, safety and alternative treatment strategies; d) are reviewed and revised at regular intervals not longer than 5 years; e) after approval, are widely disseminated.

In psychiatry, one of the first developers of the new style of guidelines was the Royal College of Psychiatrists of Australia and New Zealand (2). The APA began developing practice guidelines in 1990 (3). At first there was considerable concern about the project and some resistance by psychiatrists who anticipated that the use of guidelines would contribute to a culture of 'cookbook medicine'. There was also concern that the publication of guidelines would lead to increased professional liability for practitioners. However, as the project continued and clinically sound guidelines were produced by an iterative process involving a large number of members, there was a gradual increasing acceptance of the guidelines (4). The APA has now published 12 guidelines. Each guideline has been published in the American Journal of Psychiatry and is also available on the APA web site. Three of these guidelines are revisions of earlier guidelines and the Association is committed to revising the guidelines regularly, with intervals not exceeding 5 years.

BENEFITS OF GUIDELINES

The benefits of guidelines can be grouped into six major categories: a) implementation of 'best-practice' psychiatric treatment; b) education of psychiatrists, other physicians and other mental health professionals; c) provision of information to the patient and family; d) improved funding of psychiatric services; e) identification of 'gaps' in the research base and promotion of more effective research; f) increased recognition of the scientific basis of the treatment of mental illnesses.

Implementation of 'best practice' treatment

The primary goal of practice guidelines is to improve the quality of care patients receive. The most useful feature of practice guidelines in achieving this goal is the synthesis of the available evidence for the effective treatments of mental illnesses. There are two sources of evidence: published research studies and consensus of clinical experts. It has become increasingly

difficult for clinicians to remain abreast of all the new developments in our field, as the amount of new evidence relevant to the treatment of mental illness has grown so rapidly. The development of practice guidelines generally involves a literature search and the creation of evidence tables. The evidence tables provide the data so that evidence-based recommendations can be formulated. In the APA process, the major recommendations for each guideline are included in an executive summary. The recommendations are weighted I, II, or III, which represents varying levels of clinical confidence in the recommendation: 'I' indicates recommended with substantial clinical confidence, 'II' indicates recommended with moderate clinical confidence, and 'III' indicates options that may be recommended on the basis of individual circumstances. In addition, each reference is coded 'A' through 'G' indicating the nature of the supporting evidence. As a result of the weighting of the recommendations and the coding of references, the clinician is able to review the extent and nature of the evidence concerning the various interventions in the treatment of the specific disorder.

Education of psychiatrists and other professionals

As a result of their comprehensive nature, the thorough literature search and the extensive, coded reference section, the guidelines can be an important part of the residency curriculum. Some residency programs have established and studied protocols for including the guidelines in the curriculum of each year of the residency. The American College of Psychiatrists administers a yearly Psychiatric Resident In-Training Examination (PRITE), which the majority of residents in the US take yearly. The PRITE exam contains questions taken directly from the guidelines. In addition, the APA project includes the development of Continuing Medical Education (CME) questions on the guidelines that are available on the web site of the APA. In addition to education concerning the content of the guidelines, residents and students who study the guidelines also learn how to critically evaluate research studies and incorporate the information gleaned from studies into their clinical work. Although the APA practice guidelines are developed for use primarily by psychiatrists, other physicians and other mental health professionals can also benefit from the comprehensive review of the available evidence and the presentation of the clinical reasoning.

Provision of information to the patient and family

In psychiatry, as in all of medicine, it has been increasingly recognized that it is beneficial for the patient and family to be informed about treatment alternatives and to participate in treatment decisions. Such information and participation can strengthen the therapeutic alliance, increase the support of the family for the patient and the treatment and increase adherence to treatment. Published

guidelines that are accepted by the profession could potentially be a resource for this purpose.

Improved funding of psychiatric services

All too often decisions concerning reimbursement of psychiatric services are based not on evidence of efficacy or effectiveness but on some arbitrary and at times incomprehensible criteria. For example, reimbursement decisions concerning length of stay in an inpatient unit are frequently based on actuarial data rather than any outcomes or even cost-effectiveness data. To the degree possible, funding decisions should be evidence-based and driven by the principle that covered services should be the ones which work. Services that have been demonstrated not to be effective should not be reimbursed.

Promotion of research

The development of ICD and DSM has significantly accelerated the acquisition of new knowledge, as clinicians and researchers are better able to identify similar illnesses and compare findings. Similarly, adherence to practice guidelines can increase the comparability of treatment approaches and promote more effective research. Developing guidelines also identifies the gap in the research base and helps formulate research questions to narrow that gap. Nationally approved guidelines that identify such gaps can be helpful in obtaining support for research projects. One of the sections in each of the APA practice guideline focuses on potential research directions.

Recognition of the scientific bases of psychiatric treatment

The stigma of mental illness continues to be a major issue. The perception of many, including health care professionals, is that psychiatry is a 'soft' science and treatment of mental illness is not focused or specific and certainly not effective. Publication of evidence-based practice guidelines helps combat those misperceptions. Hence, practice guidelines can be part of an advocacy agenda focusing on the reality that there are specific treatments for mental illnesses and that these treatments are effective.

LIMITATIONS OF PRACTICE GUIDELINES

Despite the considerable benefits of practice guidelines, there are also a number of limitations: a) lack of implementation; b) gaps in research base; c) reductionistic approach to medical care; d) cultural issues; e) liability concerns; f) availability of resources.

Lack of implementation

Numerous studies have demonstrated that, despite the publication of a large number of guidelines and encourage-

ment by academic and professional association leaders to use guidelines, physicians generally do not use the guidelines in their day-to-day clinical work (5). Dissemination and implementation strategies have become the major focus of many guideline efforts. It is clear that comprehensive and hence relatively lengthy guidelines are not easily used in busy practices. As part of the APA project, Quick Reference Guides (QRGs) have been developed for each guideline. These algorithmic formatted tools are much shorter and more easily used in everyday practice and have been very well received by psychiatrists. There have been some attempts to implement the use of guidelines across large systems of care (e.g., the Texas Medication Algorithm Project (6)) and also attempts to develop interactive computer programs to encourage learning and use of the guidelines.

Gaps in research base

As noted above, there are extensive gaps in our research base. This is especially true for long-term treatments, including psychotherapy. In addition, second-line interventions have been less well studied and hence providing evidence-based recommendations is problematic. Treatment resistant conditions, in which multiple strategies have not been successful, present significant challenges in developing evidence-based treatment recommendations. As a result of these limitations of research, clinical consensus becomes especially important. Also, evidence collected from non-research clinicians can help bridge the gaps. The APA has developed a Practice Research Network currently composed of 900 psychiatrists to provide some of this data (7). Contributing to the gaps in our research base is the reality that a majority of patients with mental illness present with comorbid conditions (8). There is relatively sparse research data concerning effective treatments of these patients, as research studies have frequently excluded patients with more than one diagnosis. Also, if guidelines are to be written addressing the treatment of patients with comorbid mental illnesses, the number of guidelines to be developed increases significantly. In the APA project, issues concerning comorbidity are addressed in the section entitled 'Factors influencing treatment' and the reader might also be referred to the APA Guideline that deals with the comorbid condition. It is anticipated that in the future we may begin to develop guidelines for patients with common co-morbid illnesses (e.g., major depressive disorder and alcohol abuse).

Reductionistic approach to medical care

If they are not well developed, guidelines can be reductionistic and be experienced by clinicians as a 'cookbook'. Such guidelines can also stifle the consideration of newly developed therapeutic interventions. Significant evidence for a treatment may be close to publication at the time a guideline is being completed. It is important that guidelines

explicitly state that they do not necessarily include all proper methods of care and that there may be other acceptable and effective methods of care aimed at the same results.

Cultural issues

An area for which evidence is especially sparse is the impact of cultural issues on treatment decisions. Practice guidelines are negatively impacted by this reality. This is a major issue for the international development of guidelines. The Quality Assurance Section of the WPA is exploring approaches to this problem.

Liability concerns

The development of practice guidelines has created concern about the potential escalation of malpractice claims. A physician's failure to follow the recommendations in a guideline approved by a national association might be used by the plaintiff's attorney as proof that the physician did not adhere to a standard of care. To minimize this possibility, a guideline should explicitly state that it is not a standard of care. Eddy et al (9) have clearly delineated the difference between a standard of care, where clinicians should adhere to the recommendations in essentially all cases, and a guideline, where exceptions to the recommendations are more common and require less justification. To date, it does not appear that the use of practice guidelines has increased medical liability (5). In fact, medical specialties that were early developers of guidelines (obstetrics/gynaecology and anesthesiology) experienced a decrease in successful malpractice claims after the guidelines were developed and implemented.

Availability of resources

Related to the liability issue is the reality that often the recommendations of a guideline cannot be followed because of a lack of adequate resources. Early in the APA project there was considerable debate as to whether a guideline should identify a minimum set of recommendations or what might be described as an optimal approach to treatment. The decision was made that for APA guidelines the recommendations would reflect optimal care. It is hoped that in those circumstances where the needed resources are not available, the guideline might be used as a tool to support the request for additional resources.

CONCLUSION

Clearly there are a number of important limitations to the usefulness of practice guidelines. However, each of these limitations can be minimized and further improvement in the development as well as the dissemination and implementation of guidelines will occur. The advantages in the use of evidence-based guidelines in the treatment of patients

are considerable and their use will increasingly contribute to improvement in the quality of care available to patients.

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WPA educational programs

ROGER MONTENEGRO
WPA Secretary for Education

WPA educational programs have proved to be a very useful tool in the continuous medical education of psychiatrists and other health professionals. WPA Sections usually participate in the building of these programs, which carefully respect ethical standards. The programs have been written from a multicultural perspective, in line with the spirit of the WPA, and they provide visual materials and practical suggestions to implement them. The active collaboration of WPA Member Societies, Zonal Representatives and the members of the WPA Educational Liaisons Network, as well as the easy access to these educational materials provided by the widespread use of the Internet, have enabled us to reach a significant number of psychiatrists scattered all over the world.

It is important to note that the translation of these WPA educational programs into other languages will be highly beneficial for WPA components and the psychiatric community as a whole. All those who are willing to collaborate with the WPA in this respect could contact the Secretary for Education at rogermontenegro@wpanet.org.

AVAILABLE PROGRAMS

A widely used and appreciated program is the *Core Curriculum in Psychiatry for Medical Students*, produced by the WPA in conjunction with the World Federation for Medical Education. The document is a landmark in education of psychiatrists, but it has the wider significance also of reflecting the clinical policy now necessary for the actual practice of medicine. The document thus has a dual thrust, directed primarily at the teaching of psychiatry, and more generally at health service delivery, i.e. clinical policy. In both spheres, promotive and preventive medicine has emerged

from the sidelines to become a major priority. The complete English and Spanish versions are available in WPA Online (www.wpanet.org).

The WPA has just finished developing the *Institutional Program on the Core Training Curriculum for Psychiatry*. The main educational goal has been "to construct the core elements of a graduate training curriculum in psychiatry in order to ensure high quality of psychiatric services via creation of competent psychiatrists in all areas of the world". The curriculum is now available in WPA Online.

The *ICD-10 Training Kit*, a program developed by the WPA in collaboration with the World Health Organization, is also available in WPA Online, both in English and in Spanish. Classification is an essential part of the language which allows national and international communication in the field of mental health and facilitates joint work across cultures and countries. The appearance of the ICD-10 has been an event of vast importance for psychiatry. The challenge is to familiarize psychiatrists and other mental health workers with the ICD-10 to help them to use it well.

The *WPA/PTD Educational Program on Depressive Disorders* is a widely used program which consists of four modules: Overview and Fundamental Aspects; Depressive Disorders in Physical Illness; Depressive Disorders in Older Persons; General Introduction to Training Physicians in Mental Health Skills. Many hard copies were distributed among users all over the world and now the modules are available in WPA Online.

Social Phobia, a program to increase awareness, diagnosis, and treatment of social phobia - an anxiety disorder increasingly recognized to cause significant harm to individuals, families, and society as a whole - is available in WPA Online both in English and in Russian.

Mental Health in Mental Retarda-

tion - The ABC for Mental Health, Primary Care and Other Professionals is a program developed by the WPA Section on Mental Retardation. It has an interdisciplinary nature, including the perspectives of developmental medicine, neuropsychology, genetics, education, psychology, vocational training, anthropology, and sociology. This 'ABC' keeps clinicians up to date in this wide ranging and rapidly changing information environment. The program is available in English, Italian and Spanish in WPA Online.

In recent years the WPA has been giving special attention to the *Professional Development of Young Psychiatrists*, a program which coordinates and develops further WPA efforts and activities along the following lines: affirm and consolidate fellowship programs at World Congresses of Psychiatry and WPA Regional Meetings and Thematic Conferences; organize courses, specially in developing countries; stimulate and expand the use of WPA educational networks; establish collaborative links with other institutions interested in training and professional development; establish prizes and other incentives to promote scientific contributions; evaluate the above listed activities in coordination with the WPA Educational Liaisons Network.

The *WPA Bulletin on Depression*, issues 13 to 22, can be downloaded from WPA Online. The Bulletin clearly and objectively communicates new knowledge and information on depression, allowing a better recognition of the illness. It also describes new methods for the treatment of patients suffering from depression and for the prevention of the recurrence of the illness. It is intended not only for psychiatrists, but for general practitioners as well.

The latest WPA educational program has been just launched at the 12th World Congress of Psychiatry. This is, in fact, an update of the program *Teaching and Learning about Schizophrenia*. Advances in treatment and in studies of pathophysiology (especially using genetics and neu-

roimaging tools) have substantially changed our understanding of schizophrenia. Furthermore, changes in technology permit a new approach to providing education. While the original document consisted of a text and hard copies of slides, which limited distribution and dissemination, the expansion of the worldwide web now makes it possible to create an educational program that can be posted in WPA Online and become accessible to anyone who wants to consult and use it. Consequently, an extensive revision has been made of the original materials. The program is divided into four modules: Clinical Presentation, Pathophysiological Mechanisms, Treatment, and Case Vignettes. The first three modules consist of a text and accompanying slides that illustrate the contents of the text. Through the combination of text and slides, lectures can be developed of variable complexity, length, and sophistication.

All WPA educational programs available in WPA Online are listed at http://www.wpanet.org/sectorial/edu4a.html, with direct links to the programs themselves.

Women's Mental Health, Old Age Psychiatry, Education in Psychiatry, Psychiatry and Sleep-Wakefulness Disorders, Psychiatric Rehabilitation, Clinical Psychopathology, Suicidology, Urban Mental Health, Addiction Psychiatry and Eating Disorders.

New WPA Sections

During the triennium 1999-2002, four new Sections have been admitted to the WPA on an ad hoc basis. These Sections are the ones on Personality Disorders, Psychoanalysis in Psychiatry, Schizophrenia, and Suicidology.

News from WPA Sections

GEORGIOS N. CHRISTODOULOU
WPA Secretary for Sections

The Sections' Newsletter

The Executive Committee has authorized the Secretary for Sections to launch a new WPA project, the WPA Sections' Newsletter. This Newsletter will be an evolution of the periodic communication of the Secretary for Sections with the leadership of each Section and with the Sections as a whole.

The number of Sections has increased to 55 and their activities have become more intensified. Therefore, the need for a more systematic instrument of communication has become evident. Additionally, the Sections deserve greater visibility. They contribute tremendously to the work of other WPA components, but their work is integrated in the activities of these other components and is not visible. The Newsletter will provide the Sections with a forum to present their work and receive credit for it. Inter-sectional collaboration and communication will hopefully also benefit from the Newsletter as well as communication of the Sections with the Member Societies.

The Editor of the Newsletter, G. Christodoulou, and the Editorial Board, composed of the members of the Operational Committee for Sections, look forward to collaboration and input primarily from the Sections but also from the other WPA components. The first issue of the Newsletter has just been published.

The volume "Advances in Psychiatry"

This volume, edited by the Secretary for Sections, consists of scientific update contributions by more than 30 WPA sections. It has been printed by Beta Publishing Company in Athens. The contributing Sections are the ones on Occupational Psychiatry, Interdisciplinary Collaboration, Psychophysiology, Transcultural Psychiatry, Psychological Consequences of Torture and Persecution, Preventive Psychiatry, Ecology, Psychiatry and Mental Health, Psycho-oncology, Mass Media and Mental Health, Psychopathology of Expression, Forensic Psychiatry, Mental Retardation, Informatics and Telecommunications in Psychiatry, Conflict Management and Resolution, Immunology and Psychiatry, Military and Disasters Psychiatry, Private Practice, Mental Health Economics, Measurement Instruments in Psychiatric Care, Biological Psychiatry, Psychotherapy, Affective Disorders, Psychiatry, Medicine and Primary Care,

Contributions to the 12th World Congress of Psychiatry

Practically all WPA Sections have participated in the Congress with a variety of contributions, mainly Section Symposia.

In keeping with the partnership motto of the Congress, many Sections have collaborated and have presented joint proposals. One such example is the collaboration of the Section on Military and Disaster Psychiatry (chaired by F. Lebigot and M. Benyakar) with the Section of Anxiety and OCD (headed by J. Zohar) and the Special Program on Disasters (headed jointly by G. Christodoulou and J.J. López-Ibor) in the production of the so-called 'Disasters Day', a special program with various forms of contributions (symposia, courses, posters, etc.) that dealt exclusively with the issue of disasters and occupied a full day of the Congress. Another such example is the intersectional symposium on Prevention (co-ordinated by G. Christodoulou and D. Lecic-Tosevski), to which representatives of five of our Sections participated, highlighting the relationship and potential contribution of their Sections to psychiatric prevention. A similar experiment that eventually proved very successful was attempted in Athens in the course of the WPA Regional Meeting on Psychiatric Prevention (1999). Ten WPA

Sections contributed at that time.

Even more important than joint scientific presentations is joint research, and Sections are strongly encouraged to collaborate in this field as well.

The Section on Psychopathology of Expression

The Section on Psychopathology of Expression (chaired by C. Carbonell and H.O. Thomashoff) has prepared an exciting art exhibition for the Yokohama Congress. This exhibition has been a continuation of the exhibitions "Psyche and Art" (11th World Congress of Psychiatry, Hamburg 1999) and "Peoples' Dignity through the Cultures" (WPA International Congress, Madrid 2001).

The exhibition of Yokohama has been composed of the following two elements: a) a comparison of psychiatric art from Asia and Europe to address the fundamental question of whether there are characteristics in style due to an inborn constitution of the human being largely independent of his or her cultural surrounding; b) a comparison of how psychiatric art has been perceived by museums and by academic art in Asia (Setagaya Museum) and Europe (Aesthetics of Psychiatry, Peter Pongratz).

The goal of the Section on Psychopathology of Expression is to "expand the exhibition project into a permanent and continuously growing presence of psychiatric art in the international public as a means to promote destigmatisation, in line with the strategy of the WPA".

New WPA officers

The new WPA officers, elected during the General Assembly held in Yokohama on August 26, are the following:

Executive Committee
President Elect – J.E. Mezzich (USA)
Secretary General – J. Cox (UK)
Secretary for Finances – S. Tyano (Israel)
Secretary for Meetings – P. Ruiz (USA)

Zone Representatives
Zone 2 (United States) – A. Tasman (USA)

Zone 3 (Mexico, Central America and the Caribbean) – E. Camarena Robles (Mexico)
Zone 4 (Northern South America) – E. Belfort (Venezuela)
Zone 7 (Northern Europe) – M. Kastrup (Denmark)
Zone 8 (Southern Europe) – L. Küey (Turkey)
Zone 9 (Central Europe) – P. Smolik (Czech Republic)

Zone 10 (Eastern Europe) – V. Krasnov (Russia)
Zone 11 (Northern Africa) – T.A. Okasha (Egypt)
Zone 12 (Middle East) – F. Antun (Lebanon)
Zone 13 (Western and Central Africa) M.O. Olatawura (Nigeria)
Zone 18 (South Pacific) – J. Wilson (New Zealand)