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FORUM – *PREVENTION OF SUBSTANCE ABUSE WORLDWIDE*

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WPA NEWS

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The World Psychiatric Association (WPA)

The WPA is an association of psychiatric societies aimed to increase knowledge and skills necessary for work in the field of mental health and the care for the mentally ill. Its member societies are presently 130, spanning 113 different countries and representing more than 150,000 psychiatrists. The WPA organizes the World Congress of Psychiatry every three years. It also organizes international and regional congresses and meetings, and thematic conferences. It has 60 scientific sections, aimed to disseminate information and promote collaborative work in specific domains of psychiatry. It has produced recently several educational programmes and series of books. It has developed ethical guidelines for psychiatric practice, including the Madrid Declaration (1996). Further information on the WPA can be found in the website www.wpanet.org.

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World Psychiatry

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Globalization and mental health: a WPA perspective

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Globalization may be defined as a process in which the traditional boundaries separating individuals and societies gradually and increasingly recede. The process has clearly both negative and positive results and is likely to create both losers and winners. Globalization has promised to grant the world instant communication, fast and efficient means of travel, a widened access to technology, cross border cultural interaction and globalized approaches to environmental issues. However, it also entails deregulation of commerce and the creation of supernational political and economic bodies. As a result, the gap is widening between societies which enjoy knowledge, technology and the ability to control events and others which are still backward, ignorant, frustrated, helpless and unable to follow progress and self-actualization.

Critics point out that the internet, for example, remains the realm of a privileged minority, as most of the world's population have never made a telephone call, let alone sent an e-mail.

The global village allegedly created by globalization is not that global after all. If we assume that 100 people are living on earth, 57 of them are Asians, 21 are Europeans, 8 are Africans, 6 are Americans; 48 are men and 52 are women; 30 are white and 70 are non-white; 30 are Christians and 70 are non-Christians. On the other hand, six people own 59% of the community wealth and they are all North Americans. Eighty live in poverty, 70 cannot read, 50 die in famine, 1 has a higher education and 1 has a computer. It is obvious that power and resources do not seem to follow the majority/minority pattern of the world population, i.e., globalization has failed until now to democratically represent the world it has claimed to globalize (1).

GLOBALIZATION OF MENTAL HEALTH: AN UNMET CHALLENGE

Mental health is a state of well-being whereby individuals recognize their abilities, are able to cope with normal stresses of life, work productively and fruitfully and make a contribution to their communities.

The prevalence of mental disorders is closely related to social, economic and cultural conditions. If we consider all the previously mentioned changes in information technologies, we can easily foresee that the shape and content of mental disorders, and consequently of psychological and psychotherapeutical treatments, will undergo serious changes.

Mental ill health is occupying an increasingly larger space within the world disease burden. Saraceno (2) has shown that poverty and mental disorders feed into each other, one leading to another in a vicious circle that has to be broken by either the eradication of poverty or adequate intervention with patients with mental disorders or preferably both. More alarmingly, he showed that the gap between the treated and untreated is higher for child and adolescent disorders than for major depression or schizophrenia (i.e., the coming generations which will hold the responsibility of the world are the ones which are the most marginalized in the provision of mental health care).

Rapid changes provide both a threat and an opportunity for psychiatry. Cuts in government spending represent the most obvious risk, since most psychiatric services are largely either directly or indirectly dependent on government funding. On the other hand, demand for psychiatric services, both quantitatively and qualitatively, is increasing.

In psychiatry, the most important aspect of globalization is delivering mental health services in an equitable pattern, providing equal treatment and establishing equal outcome to our patient population, no matter which part of the world they come from (1).

So far, globalization has affected psychiatric clinical practice in a multitude of ways, which unfortunately do not include a worldwide provision or access to mental health care services:

- Increased ethnic and cultural diversity of service users has led to a wider range of attitudes and beliefs in relation to mental illness.
- Increased ethnic and cultural diversity of service providers has led to a wider range of approaches and beliefs in relation to mental health care.
- In developed countries, increased rates of inward migration have led to increases of migration-associated mental disorders. In rapidly developing countries, socioeconomic changes and life events have led to increases in rates of mental disorders.
- In all countries, the development of technology has led to increased information on a range of health care services, resulting in increased demand.
- Finally, globalization has contributed to an increased emphasis on the implementation of international protocols in psychiatric training, mental health policy and the protection of human rights of mental patients. It has also resulted into a thorough examination of the concept of social capital and its influence on the mental health of populations.

In fact, globalization, as it has been implemented to this very day, highlights several crises of different natures: a leadership crisis (where wealth is allowed to be concentrated in fewer and fewer hands so that the world's three richest individuals have assets exceeding the gross domestic product of the poorest 48 countries); a democratic crisis (where 1.3 billion people live on incomes of less than 1$/day); an economic crisis (where nearly 1.5 billion people have no access to clean water, and 1 billion live in miserably substandard housing); a spiritual crisis (where many people are so poor that they can only see God in the form of bread), and, last but not least, a moral crisis (where 40 thousand children die each day from malnutrition and disease) (3).

ROLE OF PSYCHIATRISTS

As health professionals, we are bound by our commitment to the health of our patients; as psychiatrists, we are especially concerned with their mental health.

The Declaration of Madrid states that psychiatrists "must advocate for fair and equal treatment of the mentally ill, for social justice and equity for all". They should thrive for the continued provision of high-quality, evidence-based mental health care.

In the field of diagnosis, globalization of ICD-10 and DSM-IV criteria will provide our patients with a global up-to-date tool for diagnosis, which should be linked with management and outcome.

Evidence-based psychiatry will ensure better services even for poorer countries, by filtering out the unnecessary affluent therapies and leave the essential necessary parts for implementation in developing countries.

ROLE OF THE WPA

In response to the problems caused or highlighted by globalization, it is necessary to address issues in psychiatric training, service provision and social policy and to increase the emphasis placed on transcultural psychiatry in mental health curricula. Furthermore, one does not need financial resources to be able to respect human rights. The best way to ensure that human rights are respected on a global scale is to increase awareness and implementation of the United Nations principles regarding people with mental illnesses.

The WPA has developed an under- and post-graduate core curriculum that places significant emphasis on transcultural issues. The cultural variability of nations does not have to be paralleled by discrimination in accessibility to services. Globalization in psychiatry can be implemented in the field of human rights of mental patients. Of special concern in that regard are migrant mental health and political abuses of psychiatry.

There is no excuse for denying mental patients access to therapy and management. Even from an economic point of view, Mumford et al (4) have shown that the treatment of every diagnosable affective disorder would lead to a 2% increase in health expenditure and a 20% decrease in health care expenditure per capita.

In 2002, the WPA General Assembly in Yokohama endorsed a consensus statement on globalization and mental health (5). This statement called upon all WPA components to raise public and government awareness that the effects of globalization will be optimized only when improvements in health and well-being become central objectives of national economic policies and of the design and management of the international economic system; and that mental health is part of public health. It called upon psychiatrists to be in a position to actively shape policy, to form national alliances, to lobby internationally for a more equitable distribution of resources and quality of care, and to ensure that governments are aware of the implications of globalization on human rights and mental health. It appealed to them to advocate for fair and equal treatment of the mentally ill, for social justice and equity for all, and to serve patients by providing the best therapy available consistent with accepted scientific knowledge and ethical principles. Even when challenged by the obstacles imposed by globalization, psychiatrists should remain committed to their mandate and the Declaration of Madrid.

To achieve globalization of mental health services, we need more studies on the psychological variables affecting mental illness, the provision of a better structure for psychosocial intervention for both developing and developed countries, and a more equitable distribution of world resources.

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SPECIAL ARTICLE

Are genes destiny? Have adenine, cytosine, guanine and thymine replaced Lachesis, Clotho and Atropos as the weavers of our fate?

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It is as futile to ask how much of the phenotype of an organism is due to nature and how much to its nurture as it is to determine how much of the area of a rectangle is due to its length and how much to its height. Phenotype and area are joint products. The spectacular success of genomics, unfortunately, threatens to re-awaken belief in genes as the principal determinants of human behavior. This paper develops the thesis that gene expression is modified by environmental inputs and that the impact of the environment on a given organism is modified by its genome. Genes set the boundaries of the possible; environments parse out the actual.

Key words: Genomics, ontogenetic niche, polyphenism, collective efficacy, heritability, phenylketonuria, thalassemia, gene regulation, Williams syndrome

When I completed my psychiatric training in the United States, more than a half century ago, genetics was anathema. Psychoanalysis was viewed as the cutting edge of psychiatry and excited the best and the brightest of young residents.

Fifty years later, psychiatry in the United States has been turned upside down. The discovery of psychotropic drugs has transmuted psychiatrists into psychopharmacologists. Despite extensive evidence that manualized psychotherapies (cognitive behavior therapy and interpersonal psychotherapy) are as effective as tricyclics and selective serotonin reuptake inhibitors for mild and moderate depression, interest in psychological treatments continues to wane.

Prodigious advances in neuroscience and in brain imaging have yielded a dynamic model of a brain that is shaped by experience and continues to change over the life course. To cap the revolution, the mapping of the human genome promises to make it possible to identify genes that influence risk and resistance to psychiatric disorders. Discoveries in neuroscience and genomics continue the reshaping of psychiatry into a disproportionately biological specialty where it had once been a disproportionately psychosocial specialty.

Despite the one-sidedness, the gains in our science base constitute a very considerable advance over the days when I was trained. What is unacceptable in the “new” psychiatry is a naïve genetic determinism that fails to take social context into account, just as the “old” psychiatry ignored biology. Just as I was troubled by psychoanalytic exclusivism then (brainless psychiatry), I am troubled by the dominance of a fixation on biology (mindless psychiatry) that ignores social context (1). The aim of this paper is to reiterate the central principle of evolutionary genetics: just as the unique response of the organism to its environment depends on its genome, the expression of that genome is conditioned by that environment.

GALTON’S “CONVENIENT JINGLE”

In his study of “English Men of Science”, Francis Galton (2) sought to discriminate the influence of heredity from that of environment. Viewing the relationship between the two as dichotomous and competitive, he wrote: “The phrase ‘nature and nurture’ is a convenient jingle of words ... it separates under two distinct heads the innumerable elements of which personality is composed. Nature is all that a man brings with himself into the world; nurture is every influence from without that affects him after his birth…When nature and nurture compete for supremacy on equal terms… the former proves to be the stronger … [although] neither is self-sufficient.”

Will detailed knowledge of the genome foretell the future of our children? In Greek mythology, three figures wove the tapestry of human fate: Lachesis, the measurer, allotted to each his portion; Clotho, the spinner, spun out the threads of life; and Atropos, the lady of the shears, severed the thread at the appointed time. Similar myths abound in other cultures. In the Icelandic sagas, man’s fate is determined by the witches, Urdur, Verdandi and Skuld. How far do these ancient myths foretell the truth? Are adenine, cytosine, guanine and thymine the weavers of our fate?

To put the question in these terms is to enthrone Galton’s jingle. To ask how much of the phenotype is due to nature and how much to nurture is as profitless as to ask how much of the area of a rectangle is due to its length and how much to its width. Every phenotypic trait reflects the outcome of gene expression in particular environments.

Of course, there are limiting cases at either extreme; that is, there are lethal genes (mutations incompatible with fetal viability) and environments lethal to every genome. When tons of carbon dioxide erupted from Lake Nyos in Cameroon on August 21, 1986, the cloud suffocated everything in its path as it rolled down the hill. By next morning, 1700 people and countless animals were dead (3). There were no gene-based exceptions. In most clinical circumstances, however, the gene effects we encounter have been modified by the environments the organism has experienced and the environmental effects we see are dependent on the genomes of the organisms they have acted upon.

THE ONTOGENETIC NICHE

Nature and nurture stand in reciprocity, not opposition. Offspring inherit, along with their parents' genes, their parents, their peers, and the places they inhabit. West and King (4) have coined the term "ontogenetic niche" to emphasize that organisms develop within an ecological and social setting that, like their genes, they share with their parents. It helps us recognize that neighborhood and neighbors matter along with parents and siblings. The ontogenetic niche is a legacy that guides development, a crucial link between parents and offspring, an envelope of life chances. Replacing the rhetorical contrast "nature versus nurture" with "nature, niche, and nurture" emphasizes the conjunctions rather than the oppositions that shape the developmental trajectory.

The impact of neighbors and neighborhood as niche is clearly evident in the findings of the Project on Human Development in Chicago Neighborhoods (5). Tony Earls and his colleagues (6) knew that certain characteristics of neighborhood structure – the concentration of poverty, the extent of ghettoization, residential instability – account for a significant amount of the variance in adolescent antisocial behavior (7). However, what they were able to show by the use of sophisticated statistical methods is that, after adjusting for prior levels of neighborhood crime, informal social control emerged as a significant deterrent to adolescent delinquency (8). "Informal social control" refers to the likelihood that adults in the community will monitor spontaneous children's play groups, intervene to prevent truancy and street corner hanging out by teenagers, and confront persons misusing or disturbing public space. Further, informal social control reflects the ability of cohesive communities to demand needed resources from city authorities for police patrols, fire stations, garbage collection and housing code enforcement. The importance of this power is apparent from the correlation between abandoned housing, burned out buildings, graffiti and litter in an area and more serious crime.

"Collective efficacy" is the term proposed for the social cohesion among neighbors willing to act on behalf of the common good. Unstable and poverty-stricken neighborhoods with high concentrations of recent immigrants display low collective efficacy. In turn, low efficacy itself mediates a substantial part of the association between disadvantage and violence. The ecology of neighbors and neighborhood interact with family characteristics to determine behavioral outcomes (5).

CALCULATING HERITABILITY

Before the specific genes have been identified, geneticists commonly employ a measure termed "heritability" to partial out the genetic contribution to a trait of interest. This measure disregards variance arising from genotype-environment interactions, from assortative mating, and from interactions between genes (that is, different loci do not always act in additive fashion). Beyond matters of methodology, research on humans is constricted by the limited range of environments to which given populations have been exposed (in contrast to agricultural research, where soil, temperature, sunlight, irrigation, fertilizer, as well as plant genotype, can be systematically modified). Estimates of "heritability" reflect no more than the findings on a specified population sampled in a given geographic range during a particular historical era (9). Rather than being a statistic applicable to all populations at all times, heritability estimates are context-bound and may be higher or lower (or perhaps even unmeasurable) in other populations, in other places, at other times.

When phenocopies abound, heritability will be low or unmeasurable in such circumstances. Gene effects may become evident only after environmental variance has diminished. When changes in the environment diminish the extrinsic causes of a disease without eliminating that disease altogether, the remaining cases will show a larger heritability (10). Secular changes in the epidemiology of rickets offer a telling example.

Rickets was endemic in the United States in the 1920s. The discovery of vitamin D and the provision of D-enriched milk resulted in a dramatic decrease in the prevalence of rickets. Thus, Albright and his colleagues (11) first reported D-resistant rickets in 1937, the genetic signals previously having been unrecognizable amidst the environmental noise resulting from phenocopies. As improved living conditions in industrialized countries removed exogenous causes, the heritability of rickets increased – from undetectable levels toward one! Yet, exogenous rickets persists, albeit at a low rate, among such populations as Muslim women who continue to cover almost all their skin surfaces with clothing after moving to countries in the Northern hemisphere with less ambient sunlight; and homebound elderly patients in Boston and Edmonton during winter months when atmospheric attenuation of ultraviolet radiation in the 290-315 nm band limits vitamin D3 synthesis in the skin (12,13).

Although the "heritability" of height approaches 0.9, adult height in industrialized countries has increased by several inches during the last two centuries without significant perturbations in the distribution of the genes. Better nutrition and better health have allowed fuller expression of the growth potential already inherent in the genome. In contrast, malnourished children are stunted in growth; computed "heritability" in impoverished families is much lower.

If malnutrition influences the apparent "heritability" of height, what impact does socioeconomic deprivation have on the "heritability" of intelligence? The complexity of the relationship has been clarified in a recent study by

Eric Turkheimer and his colleagues (14). They analyzed intelligence test scores on a sample of 320 7-year old twin pairs, one third monozygotic. Their sample was unusual in that a substantial number of the children were raised in families near or below the poverty level. Few twin studies have included children from impoverished backgrounds. What were the new findings? In the author's words: "In impoverished families, 60% of the variance in IQ is accounted for by the shared environment and the contribution of genes is close to zero, whereas in affluent families, the result is almost exactly the reverse."

The calculated heritability of IQ for the children raised in middle class families was substantial (0.72), whereas heritability was barely detectable (0.1) among those in economically marginal families. The proportion of IQ variance attributable to genes, versus that attributable to environment, varies in a nonlinear fashion with socioeconomic status. The environment plays such a substantial role in the cognitive development of children growing up under deprived conditions that it obscures the genetic contribution to inter-individual variability. At or near threshold, small variations in biological and psychological input have a far more powerful effect than they do when inputs are nearly optimal. Just as inadequate food intake depresses statural height and lowers its measured heritability, affective and cognitive (as well as protein-calorie) malnutrition has similar effects on the development of intelligence. Whatever the environment, children will differ in intelligence because of genetic variance. That remains the case under growth-depressing as well as growth-promoting conditions. Because class differences reflect rearing conditions, the cognitive stunting associated with severe poverty is preventable!

POLYPHENISM

Genomic identity does *not* assure phenotypic identity. Very different phenotypes can arise from *identical* genomes, a phenomenon known as *polyphenism*; that is, the occurrence of several distinct phenotypes in a given species. Each phenotype develops facultatively depending upon cues from the internal and external environment. With changes in diet and season, dimorphic oak caterpillars express phenotypes so distinct that the two forms were originally classified as separate species. The difference between continuous phenotypic variation and discrete polyphenism is a complex underlying regulatory mechanism that controls a fork between divergent pathways. "The expression of a polyphenism begins when [extrinsic] signals are transduced into a *developmental switch* governed by the interplay of hormone secretion, hormone titre, sensitivity threshold to the hormone, timing of the hormone-sensitive period, and specific cellular responses to hormones" (15).

Female honeybee larvae differentiate into queens or workers with profound morphological differences despite identical genomes. Larvae that will become queens are reared in large vertically oriented brood cells. Queens are fed "royal jelly" by nurse bees, but there is no unique "royal" ingredient (16). What seems to matter are the large differences in the frequency, the amount, and the composition of feedings for queens. Genetically governed programs add their own effects downstream.

The developmental switch depends not on genomic differences between queens and workers, but on the differential expression of entire suites of genes. Distinct developmental differences in titres of insect terpenoid juvenile hormone and ecdysone become manifest as the growth rate of queens continues to outpace that of workers (17, 18). The ultimate phenotypic outcomes are morphologically, reproductively, and behaviorally distinct castes. Interplay between genome and socially organized behavior is exquisitely adapted to the local environment. Plentiful nutrition (or too little of it) induces polyphenisms in bees and oak caterpillars, as do day length and humidity in aphids and butterflies, and population density and predator presence in other arthropods.

POLYPHENISM AND HUMAN DEVELOPMENT

What does polyphenism in bees and butterflies have to do with human development? Charles Scriver (19) suggests that the term applies by analogy to clinical outcomes in which phenotypes differ strikingly despite identity in genes which ordinarily are decisive. Consider two five-year-old patients with phenylketonuria, each with the null mutant gene for phenylalanine hydroxylase (PAH). The patient whose genetic defect has not been recognized will exhibit severe mental deficiency, psychotic behavior, and seizures. The patient who has been identified by metabolic screening in the newborn nursery and has been maintained on a low phenylalanine diet will be within the normal range. Both are homozygous for the autosomal recessive gene; yet, their phenotypes are extraordinarily different. In the clinical case, high blood phenylalanine levels derailed brain development. In the normal patient, dietary control has prevented the metabolic consequences of enzyme deficiency. Comparable "polyphenisms" can be seen when congenital hypothyroidism, galactosemia, maple syrup urine disease, or homocystinuria are detected by neonatal screening programs and are managed appropriately (20). Despite genotypic identity, phenotypic outcome in untreated and treated cases is as night to day.

Even in Mendelian disorders like phenylketonuria, the relationship between genotype and phenotype is complex. More than 400 different mutations have been identified in the PAH gene (deletions, insertions, splicing defects, missense and nonsense mutations). Most phenylketonurics are compound heterozygotes, having inherited different mutations from each parent. Yet, without intervention, the phenotype of the compound heterozygote is grossly abnormal. The principal determinant of the phenotype in what is unequivocally a genetic disorder is the social environment: namely, access to metabolic control through diet, the age at which it is achieved, and the degree of control attained.

GENE-GENE INTERACTIONS IN MENDELIAN DISORDERS

Complexity in phenylketonuria is as nothing compared to the remarkable phenotypic diversity in the beta thalassemias. These monogenic blood disorders arise from defective beta-globin synthesis; as a result, the excess of alpha chain aggregates in red cell precursors and leads to abnormal cell maturation and premature cell destruction. At one end of the clinical spectrum, profound anemia results in foetal or neonatal death; at the other, "silent" beta thalassemia mutants may be an incidental finding in family studies. Phenotypic diversity in the beta thalassemias reflects "layer upon layer of complexity" (21).

To begin with, there are *more than 200 primary mutations* in beta-globin genes, each with different quantitative effects: most are recessive; a few are dominant.

In the second place, there are *modifying genetic loci*: those for alpha-globin and for fetal hemoglobin persistence. Comorbid alpha thalassemia can lessen the severity of beta thalassemia by diminishing the alpha chain excess. Thalassemic patients with persistent fetal hemoglobin have milder disease because the gamma chains of hemoglobin F bind the alpha excess.

The genes that control bilirubin, iron, and bone metabolism are *tertiary modifiers*. The heme products resulting from red cell destruction induce jaundice and gallstone formation; polymorphisms in the promoter gene controlling *hepatic glucuronidation* of bilirubin can ratchet disease severity up or down. Iron loading compromises cardiac, hepatic, and pancreatic function. *HFE polymorphisms* influencing intestinal iron absorption modify the severity of heart failure, cirrhosis, and diabetes. The progressive osteoporosis seen in adult thalassemics occurs because iron is toxic to the hypothalamic-pituitary axis. The iron toxicity can be slowed down or hastened by alleles for the vitamin D receptors, estrogen receptors, and collagen.

Fourth, variations in mutant gene frequencies in different populations reflect the *evolutionary effects of coselection* because of heterozygote advantage against *P. falciparum* malaria.

Finally, features of the *social environment* (comorbid infection, malnutrition, and lack of access to medical care) worsen clinical outcomes. If such is the case in "simple" Mendelian disorders, an even higher degree of complexity will characterize multifactorial disorders.

PARENTING AND GENE REGULATION

How is social experience transmuted into development? There is a two-way traffic between genes and behavior. In rats, maternal licking, grooming, and nursing behavior (LGN) shapes endocrine and behavioral stress responses in offspring (22,23). Adult offspring of high LGN dams are less fearful and show diminished hypothalamic-pituitary-adrenal responses to stress. The female pups of high-LGN dams become high-LGN dams themselves, suggesting genes at work. However, when female pups born to low-LGN dams are cross-fostered to high-LGN dams, they too become high-LGN dams. Maternal behavior has been transmitted across generations by nongenomic means – if you will, by "culture". How does that happen? Maternal care regulates gene expression in brain regions controlling stress responses. Pups exposed to high-LGN display increased hippocampal glucocorticoid receptor mRNA expression, higher central benzodiazepine receptor levels in the amygdala, and lower corticotropin releasing factor mRNA in the paraventricular nucleus of the hypothalamus. Social experience alters gene expression for the long term.

A contrasting example is provided by studies of voles, rodents similar to mice (23). Vole species vary markedly in their social behavior. The prairie vole is social and monogamous; the montane vole is asocial and promiscuous. In the male prairie vole, mating stimulates secretion of the hormone arginine vasopressin (AVP). The release of AVP is associated with pair bonding and paternal care. Does the social behavior result from AVP release? Blockade of the vasopressin receptor V1a in the brain prevents both bonding and parenting responses to mating; intraventricular injection of AVP increases affiliative behavior. The pathway from mating behavior to bonding behavior is hormonal. In contrast, administration of AVP has no effect on the montane vole. The structure of the genes controlling the V1a receptor in the brain differs in the two species; the montane vole V1a gene lacks a 428 base-pair coding sequence found in the prairie vole gene. Gene structures determine and refract behavior patterns.

GENES AS MAJOR DETERMINANTS OF BEHAVIOR

Structures govern functions even as function molds structures. Genes matter greatly; in some syndromes, they are decisive. Gene-based abnormalities can result in "behavioral phenotypes". Williams syndrome (WS) is such an instance; it is characterized by an unique behavioral phenotype: severe visual-spatial defects in the presence of enhanced face processing and emotionality. Wechsler performance IQ is significantly lower than verbal IQ. Some WS children exhibit what has been termed "cocktail speech"; that is, fluent, articulate speech with many clichés, social phrases, and irrelevancies (24). The cause of WS is an interstitial gene deletion on chromosome 7; the size of the deletion varies, and so do the clinical manifestations.

Allan Reiss and his colleagues (25) used high resolution magnetic resonance imaging to look at differences in brain structure by comparing 43 patients with WS with 40 age-and gender-matched controls. The brain volume of WS patients was 11% smaller than that of controls. Reductions in volume and gray matter density were even greater in the brain regions that play a role in visual-spatial processing (thalamus and occipital cortex). In contrast, WS patients had disproportionately *larger* volumes and *increased* gray matter density in structures known to play a major role in emotional and social behaviors (amygdala, cingulate cortex, superior temporal gyrus, fusiform gyrus, and insular cortex). The pathways from the gene deletions on chromosome 7 to the abnormalities in structure remain to be discovered. It is evident, however, that the abnormal structures go a long way toward accounting for the behavioral phenotype.

GENE/ENVIRONMENT INTERACTIONS IN SCHIZOPHRENIA

It has long been evident that the schizophrenias are familial. Risk among first degree relatives of persons with schizophrenia is an order of magnitude higher than it is in the general population. But what is the mode of transmission? Although hints abound, there is still no decisive evidence on the genes that confer risk. Even without precise identification of the genes, however, following the course of young children adopted away from mothers with schizophrenia offers a way to examine the gene/environment interactions. By far the best study of this problem by the adoption method was published in the spring of 2004.

Pekka Tienari and his colleagues (26) at the University of Oulu in Finland have reported a long-term follow-up study of Finnish adoptees, half of whom were born to mothers who were schizophrenic. The investigators derived their sample from a Finnish population register that listed all admissions to psychiatric hospitals as well as all adoptions that had taken place over a 20-year time interval. They identified 145 mothers with schizophrenia who had given birth to a child placed for adoption. The adoptee sample was matched demographically with adoptees whose mothers had no history of psychiatric hospitalization. They examined both sets of adoptees and their adopting families on carefully calibrated psychometric instruments when the adoptees had reached a median age of 23 and again when they were 35. The findings provide striking evidence for both hereditary and environmental influences.

Whereas only 8 of the 145 children born to normal mothers had become schizophrenic, 27 of those born to mothers with schizophrenia had. This highly significant difference is clear testimony to a major hereditary contribution. However, assessing the families who had reared the children yielded an equally interesting finding: namely, that 27 of the 32 adoptees who became schizophrenic had grown up in dysfunctional adoptive families.

These results suggest either that healthy child rearing diminishes the likelihood that the schizophrenic phenotype will become manifest despite genetic risk or that the expression of genetic risk requires environmental precipitants. Pekka Tienari and his colleagues could not exclude “reverse causality”; that is, the possibility that inherited biological peculiarities in the high-risk adoptees had “induced” dysfunction in their adoptive families. Weighing all of the evidence, they conclude that “neither high genetic risk nor dysfunctional family environment alone predicts schizophrenia”. What is decisive is the interaction of risk and rearing.

DEPRESSION ARISING FROM STRESS IN VULNERABLE PERSONS

It has long been known that stressful life events increase risk for depression. It is equally clear that only a minority of those exposed to stress develop clinical syndromes. Why do some succumb and others not? One obvious source is allelic variation. In the case of depression, a promising candidate is a functional polymorphism in the promoter region of the serotonin transporter gene (5-HTTLPR), because length variation in its alleles affects serotonin uptake at the synapse.

Caspi and colleagues (27) employed data from the Dunedin Longitudinal Study of Development, which had assessed more than 1000 children biennially from age 3 to 21. Among the factors recorded was exposure to stressful life events, including abuse as a child. When the study subjects were examined at 26, 17% met criteria for a major depressive episode.

For a genetic analysis, the study subjects were divided into three groups based on their 5-HTTLPR genotype: a) homozygous for the short allele, b) heterozygous, and c) homozygous for the long allele. Stressful life events had a much greater impact on the likelihood of depression among those carrying at least one short allele than they did among those homozygous for the long allele. As further evidence for the role of genetic diathesis, a documented history of abuse as a child predicted depression only in those with a short allele (27).

CONCLUSION

The clinical examples provided in this paper (the inheritance of intelligence, phenylketonuria, schizophrenia and depression) foretell the great advances in psychiatry that are promised by advances in genetic science. At the same time, these examples make clear that clinical phenotypes reflect environments as well as genotypes. Indeed, success in specifying genotypes will make it easier for clinicians to identify the relevant features of the familial and nonfamilial environment that influence the likelihood of health and disease (28).

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SPECIAL ARTICLE

Menstrual psychosis

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This paper reviews the literature on menstrual psychosis and proposes a new classification, adapting that of v. Krafft-Ebing (1902) and Jolly (1914). The world literature consists mainly of case reports; they include a few with data good enough for a statistical demonstration of the link between onset and menses. These well-documented cases include examples of pre-menstrual, catamenial, paramenstrual and mid-cycle onsets, and continuous illnesses with phasic shifts rhythmic with the menstrual cycle. In sufferers, episodes seem to be concentrated around the menarche and after childbirth. The clinical picture resembles that of puerperal psychosis, and there are at least 20 women who have suffered both psychoses at different epochs in their lives. Both seem to fall within the manic depressive rubric, so that menstruation can be another trigger of a bipolar episode. Some work suggests an association with anovulatory cycles. Cases starting before the menarche suggest a diencephalic origin.

Key words: Menstrual psychosis, menstruation, puerperal psychosis, manic depressive (bipolar) psychosis, menarche

The first observations of a possible connection between menstruation and psychological disorder appeared in the 18th century (1). At an early stage, menstrual mood disorder aroused forensic interest (2,3), and in 1827 was used as a defence in a case of filicide (4). Premenstrual psychosis was briefly described by Amard in 1807 (5), and by Brière de Boismont in 1842 (6), who also described catamenial psychosis in 1851 (7), and conducted the first survey of menstrual mood disorder. In 1858, Schlager (8) thoroughly reviewed the influence of menstruation on established mental illness, epilepsy, admission to mental hospital, suicide and crime. Berthier (9) and Icard (10) each amassed over 200 cases, which were, however, related to *all* menstrual disorders, including dysmenorrhoea, menorrhagia, amenorrhoea and the menopause. Their basis of classification was the presenting symptoms (e.g., kleptomania, pyromania, dipsomania, nymphomania, homicidal mania), not the timing of onset. In 1878, v. Krafft-Ebing (11) made the first of his two major contributions, describing 19 cases. In 1902 he wrote his monograph "Psychosis Menstrualis" (12), which introduced a temporal classification, under the headings of menstrual developmental psychosis, ovulation psychosis (single, relapsing and periodic) and epochal menstrual psychosis. In 1914, Jolly (13) revised this classification, emphasising the stage of reproductive life: psychoses starting before the menarche, at the menarche, at the menopause, recurrent menstrual psychosis, and epochal cases.

In spite of the excellence of these clinical observations and the eminence of v. Krafft-Ebing, the concept was not universally accepted. Indeed, it is probable that many psychiatrists have no knowledge of this disorder. The present review covers about 400 references, of which only the most important are cited here. A modified classification is proposed, adapting the ideas of v. Krafft-Ebing and Jolly: cases will be classified first by their timing within the menstrual cycle, and then by the reproductive epoch in which they occur.

DEFINITION

Menstrual psychosis has the following characteristics: a) acute onset, against a background of normality; b) brief duration, with full recovery; c) psychotic features: confusion, stupor and mutism, delusions, hallucinations, or a manic syndrome; d) a circa-mensual (approximately monthly) periodicity, in rhythm with the menstrual cycle.

Premenstrual tension and depression, or the menstrual exacerbation of chronic mental illness, are excluded.

Many of the cases described in the literature are based on retrospective accounts, reports from relatives and prospective studies without adequate duration or dating. These are considered *possible cases*. For a *confirmed case*, there must be enough detail on the onset of menses and psychosis to perform statistical tests, indicating a probability of <0.01. I have used a non-parametric and a parametric test. In both, the mean inter-menstrual interval is calculated. In the non-parametric test, two episodes are used to define an interval within which the psychosis starts (the spread of onsets), and the number of episodes with exact timing is counted: $p = (a/b)^{n-2}$, where a = spread of onsets in days, b = mean inter-menstrual interval in days, n = number of timed episodes. In the parametric test, $t = \frac{x - \mu}{s/\sqrt{n}}$, where x = mean onset of psychosis, μ = half the intermenstrual interval, s = standard deviation of the onsets of psychosis, n = number of timed episodes. This is referred to the t-distribution with n-1 degrees of freedom.

CLASSIFICATION BY TIMING WITHIN MENSTRUAL CYCLE

Premenstrual psychosis

These psychoses start during the second half of the cycle, and sometimes end with abrupt recovery at the onset of menstrual bleeding. This is an example:

A 16 year old girl had four mentally ill relatives on her mother's side (her grandmother and three aunts). Her menses began at 13. She presented with the history of three episodes of manic illness starting 12 days before and ending suddenly with the onset of the menses. She had a further six observed episodes for *which precise timing was available. The 4th episode began April 4th 1894 and ended suddenly with the menses on April 13th. The 5th started April 26th and ended with the menses on May 10th. The 6th started May 29th and ended with the menses on June 14th. In June, July and August there was no episode. The 7th episode began August 26th and ended with the menses (date not stated). She then had regular but increasingly mild premenstrual episodes until they ceased in March the following year. The menstrual cycle averaged 31 days and episodes began 9-16 days before menstrual flow. Using the non-parametric test, $p = 0.027$, and with the parametric test, $t = 4.2$ with 5 degrees of freedom ($p<0.001$). The abrupt cessation of symptoms with the onset of menstrual bleeding on four occasions adds further support [12, case 7].*

This is one of seven confirmed cases (12,14-17). The first five satisfied at least one statistical test in relation to the timing of onset of the psychosis. In addition, the cases of v. Krafft-Ebing (12, case 7) and Knaus (18) fulfilled criteria in respect of the resolution of symptoms with the menses. There are 64 possible cases (5-7,9,11,16,19-62). Some authors published multiple cases. In view of the exaggerated claims made for the frequency of premenstrual tension, and the association of the premenstruum with poor examination results, shop-lifting, pyromania and suicide, these cases must be approached with scepticism, but there are a large number of them.

Catamenial psychosis

These are psychoses which begin with the onset of menstrual flow. There are three confirmed (11,63,64) and thirty possible cases (7,9,11,12,14,48,50,65-80). This is an example:

A 29 year old woman, who had earlier suffered prolonged attacks of mania, developed a recurrent episodic illness which returned every month for two years. The onset of the menses was recorded in 17 successive cycles, and averaged 25 days. The onset of 16 episodes was recorded. Their mean duration was 10 days. One started two days before menstrual bleeding. The others began up to six days (mean one day) afterwards. Using the non-parametric test, the probability that this sequence occurred by chance was $8/25^{12} = 0.0000007$. With the parametric test, $t = 18.8$ with 15 degrees of freedom ($p<0.001$) [11, case 12].

Paramenstrual psychosis

These are psychoses with variable timing, always in harmony with the menstrual cycle. Because of the broad spread of onsets, they require many episodes to reach the statistical threshold. Nevertheless, there are six confirmed (12,14,47,81-84) and 34 possible cases (11-13,26,30,35,43,48,50,85-99). This is Ewald's case (81,82):

A 36 year old multiparous woman suffered a series of 'stupors' and psychotic episodes, starting after her 7th child was born. No less than 35 were dated. The inter-menstrual interval was long, with only 10 menstrual periods per year. Attempts were made to arrest the process by irradiation. The spread of onsets was about 10 days before to one day after the end of menstrual bleeding, a span of 16 days. Using only the 20 episodes which occurred before castration, the probability that this sequence of onsets occurred by chance was $16/36.5^{18} = 0.00000026$.

Mid-cycle psychosis

This is comparatively uncommon. There are three confirmed (30,99,100) and eight possible cases (30,47,78,101-104). This is Wollenberg's case (99):

This patient had 14 manic episodes related to 15 menstrual cycles. The average onset was almost mid-way between the beginning of menstrual bleeding (18 days after the last and 16 days before the next), but the spread was wide, between 6 and 25 days before menstrual flow. The first half of the cycle was spared. With a mean cycle length of 34 days, the probability that this sequence of onsets occurred by chance was $20/34^{12} = 0.0018$. Using the parametric test, with the mid-cycle as the reference, $t = 9.04$ with 13 degrees of freedom ($p<0.001$).

Epochal menstrual psychosis

This is a term introduced by v. Krafft-Ebing to denote bipolar psychoses lasting for the complete cycle, with switches linked to menstruation. There are three confirmed (105-107) and six possible cases (9,12,92,108-110). This is an example:

A 22 year old patient suffered from depression after a life event, followed by a brief manic episode. She then embarked on a cyclical illness, with 8 manic and 7 depressive episodes, related to 8 menstrual cycles. Manic episodes lasted a mean of 15 days, starting 4-6 days after the onset of menstrual bleeding. Depression lasted a mean of 8 days, starting 1-5 days before the onset of the menses. With a mean menstrual interval of 24 days, the probability that this sequence of onsets occurred by chance was 0.00003 for mania, and 0.00004 for depression. The parametric tests were also highly significant [105].

CLASSIFICATION BY STAGE OF REPRODUCTIVE LIFE

Under this heading, I shall consider prepubertal cases, single episodes at the menarche, post-partum onset, sequences during periods of amenorrhoea, and onset after the menopause.

Single episodes at the menarche

Single episodes are a poor form of evidence. If there is an association of psychiatric illness with the menarche, it will have to be established by case control or cohort studies. Nevertheless, it is interesting that such single episodes have often been described (10,13,34,40,67,69,78,92,108,111-115). Indeed, there is a possible reference in the Hippocratic apocrypha [111]: "At the first eruption of the menses… the blood appears in the womb. If it cannot escape, it hurls itself against the heart and the diaphragm, leading to torpor, drowsiness and insanity. This is followed by fever, fears, homicidal impulses, terrible utterances, command hallucinations and suicidal desires. I recommend these young ladies to get married as soon as possible. Pregnancy cures them."

This is a more modern example:

A 17 year old girl became ill on February 6th and was admitted to hospital the following day. Her condition worsened, and she became delirious on 8th and mute on 11th. On 13th, she suddenly recovered with the onset of her first menstrual period [12].

Prepubertal cases

These cases, of the greatest interest as aetiological clues, were first described in 1891 by Werner (116). Three years later, Friedmann (113) coined the term *primordiale menstruelle Psychose (menstruale Entwicklingspsychose)*, which was adopted by v. Krafft-Ebing (11). But some of the claimed cases have started after puberty, and it is important to use the term only for girls who develop circamensual episodes *before the menarche*. This concept also differs from the modern term "periodic psychosis of puberty" or "periodic psychosis of adolescence", not all of which would meet this strict definition. Without the anchor of menstrual bleeding, it is harder to confirm these cases statistically. But there are 14 cases with circumstantial evidence, some more convincing than others, the most convincing being that of Friedmann (113). There is no correspondence between these cases and the timing of post-pubertal episodes. Some appeared to be premenstrual, some catamenial, some epochal, one mid-cycle and others uncertain.

As a variant, Belhomme (117) described a 45 year old woman who had never menstruated, but who suffered a circamensual psychosis lasting several days, and remained perfectly calm in the interim. Two other reports describe monthly psychoses in girls who had never menstruated (58,118). Yamashita (17) published this unique case:

This patient developed an ectopic pinealoma at 7. This was treated by irradiation of the pituitary, which in turn caused diabetes insipidus and a prolonged prepubertal state. At 16, she was treated with oestrogen and progesterone to bring on menstrual bleeding, but stopped taking them three years later. A month after stopping the hormones, she developed a series of depressive illnesses with persecutory ideas. The intervals between onsets were 39, 22, 31, 30 and 25 days.

Observations on two medical diseases associated with menstruation are relevant here. In diabetes, cyclical changes in diabetic control have been observed in pre-pubertal girls (119), even as early as 9 years of age. In three cases, the disturbance continued after the menarche, with an almost identical cycle length. This phenomenon seems to indicate "a menstrual cycle before menstruation", and makes the reports of prepubertal menstrual psychosis seem less improbable.

The other medical disorder, menstrual hypersomnalism, has striking parallels with menstrual psychosis. Indeed, the first patient described by Pomme in 1765 (120) seemed to have a bipolar disorder, with premenstrual somnolence and menstrual excitement. The 19 cases in the world literature (120-134) include three with prepubertal onset (124,126,132). The importance of this parallel disorder is that there can be little doubt about its diencephalic origin, so perhaps this is also true of menstrual psychosis, and other psychoses linked to the female reproductive process.

Circa-mensual psychosis during amenorrhoea

There are a number of examples of a menstrual psychosis continuing when the menses failed to appear. This is the case of Guiraud et al (135):

An 18 year old girl was always a little excited during the days before her menses. On September 22nd, the day of onset of scanty menses lasting only one day, she suffered an attack of excitement and motor agitation. She recovered 20 days later, but relapsed on October 22nd. This was the day her menses were expected, but they did not return until May of the following year. During this 7 month spell of amenorrhoea, she had six further episodes, lasting 6-13 days, starting on November 21st, December 19th, January 23rd, February 18th, March 18th and April 14th.

In this example, a frank psychosis occurred only during a period of amenorrhoea, and there are others like it (11,71,78,136). In some instances, the amenorrhoeic episodes occurred shortly after the menarche (12,113,137-140) and these cases are perhaps related to the prepubertal group described above. A fair number of other cases have been described (12,18,43,47,49,91-94,108,141). In menstrual hypersomnalism, symptoms appeared or continued during amenorrhoea in two patients (121,134).

Onset after childbirth

This was first described in 1822 by Pritchard (142). There are three confirmed cases (143-145). This is an example:

A patient suffered a puerperal psychosis, from which she recovered. She then had twelve relapses, which were precisely *timed. The first four occurred 3, 9, 3 and 5 days before menstrual onset, and the next seven 10-21 days before. The full range, from 3-21 days (18 days) was 60% of the cycle. With a mean menstrual cycle of 30 days, the probability that this sequence of onsets occurred by chance was 0.006. It is interesting that the relapses, which began premenstrually, shifted to the mid-cycle [144].*

Fifteen patients with three or more menstrual or premenstrual relapses have been described (43,48,78,106, 143-152). Many others had only one or two relapses (11,12,14,44,81,87,88,92,93,103,153-166). The total number of reported cases is about 50. A menstrual psychosis can begin in the puerperium, without a preceding puerperal psychosis (48,88,93). The onset of menstrual psychosis has also been described after a miscarriage (167), and a weaning psychosis (154).

In addition to the puerperal onset of menstrual psychosis, at least 20 women have suffered menstrual and puerperal psychoses at different epochs of their lives (4,12,27,33,78,84,87,108,122,134,168-177). This is the association of a rare psychosis with an illness that afflicts only 1/1000 parturient mothers.

The menopause

If menstrual psychosis is associated with the beginning of menstruation, or its return after the furlough of childbirth, one might expect it to appear as the pituitary-ovarian axis begins to splutter in the 5th decade. In the published material, there does not appear to be an increased frequency during this epoch. There are, however, descriptions of cases which *began* after the menopause (9,10,178), and one which began after partial ovariectomy (179).

FEATURES OF THE ILLNESS

Frequency

Menstrual psychosis is rare but, because of widespread ignorance, many cases go unrecognised and one can only guess at its incidence. I have encountered at least eight possible cases in my clinical practice during the last 10 years. The only survey among hospital admissions found one case among 1,000 admissions to the Charité Hospital in Berlin (88). In sufferers, only a small proportion of the approximately 400 menstrual periods a woman experiences are affected by psychosis. The Japanese cases, and those from Iraq (56), India (46), Vietnam (174) and the Yemen (60), suggest a worldwide disorder.

There have been a few surveys. In Germany, Schröter (86), in a study of 184 female inpatients of childbearing age, briefly mentioned four depressed women who had "a change in symptoms exactly in rhythm with the absent menstruation"; three developed manic states, and one had a menstrual psychosis. This was a comprehensive survey, but individual cases were described only briefly. Algeri (180) surveyed 314 women of reproductive age at the Frenocomio di Reggio-Emilia between 1880 and 1882: he identified 28 patients with *pazzia periodica*, and described two illustrative cases. Näcke (181) surveyed 99 female inpatients with chronic psychosis between 25 and 52 years of age, and found two cases of periodic mania related to menstruation. Burckhart (94) studied 48 manic depressive patients and 55 with 'atypical' (i.e. cycloid or acute polymorphic) psychoses: only 9/70 of those who were currently ill had menstrual onsets; a higher proportion (15/34) of those currently well had menstrual onsets, of whom 11 had atypical psychoses. This is the kind of investigation that is required, but his criteria were too loose. Another German study by Mall (182) reported a considerable number of periodic relapsing psychoses with a definite relationship to the menstrual cycle. In Japan, Wakao (183) studied acute benign psychosis in women, with episodic course and stupor, confusion or oneiroid states. This report was followed by a series of papers from Mie university (100,106,184). The total number of patients reached 219. A surprisingly large number had their first onset in the second half of the menstrual cycle (98/110, if one excludes postpartum cases). Diamond et al (185) questioned 63 women attending a lithium clinic about premenstrual symptoms: 7/31 still menstruating reported premenstrual hypomania, and 3/31 menstrual hypomania, but the same was true of the controls (healthy wives and social workers). Recently, Abe and Ohta (186) studied 11 cases of recurrent brief psychoses in adolescents: 2/6 with regular menses had episodes linked to the menses. In USA, Price and DiMarzio (187) compared premenstrual symptoms in 25 patients with rapid cycling affective disorder and 25 controls: severe premenstrual symptoms were found in 15 rapid cyclers and 5 controls.

Nosology

Menstrual psychosis is *not* a 'specific disease entity'. The arguments about its nosological status echo the perennial dispute about puerperal psychosis (188). The crucial evidence against its specificity is the observation that the most typical examples have manifested non-menstrual bipolar disorder at another stage of life – e.g., that of Mendel (105), in which the phasic psychosis metamorphosed into a chaotic, continuous illness. There are several indications that menstrual and puerperal psychoses are related. Their clinical range is similar: mania, stupor, catatonia, schizoaffective depression or cycloid episodes. A proportion of patients with puerperal psychosis relapse in the premenstrual phase. There are a substantial number of women who suffer from both psychoses at different times in their lives. Since there is much evidence that puerperal psychosis belongs with the manic depressive (bipolar) group (188), menstrual psychosis may also belong under this rubric. Menstrual psychosis, like puerperal psychosis, offers an opportunity to investigate the triggers which unleash manic depressive and cycloid episodes in susceptible women. Associations have also been observed with weaning (131,189), post-abortion (12,47) and post-operative (29,159) psychoses.

Genetics

There have been no formal genetic studies, but there are case reports mentioning first degree relatives with menstrual psychosis (6,29,36,40,59,86,136,190) or with other psychoses related to female reproduction (12,14,141,152). These sporadic reports suggest that an international prospective molecular genetic study would be productive.

Hormonal studies

Menstrual psychosis may be related to the pituitary-ovarian axis, but there have been few hormonal studies.

Apart from the astonishingly detailed single case study of Cookson (47), only the Japanese have conducted systematic investigations. In the most detailed study, Kitayama et al (106) evaluated thyrotropin-releasing hormone, lutein-releasing hormone, dexamethasone suppression, insulin tolerance, circadian cortisol rhythms and growth hormone response to hypoglycaemia in up to 23 patients. The Japanese work (49,50,106,184,191,192) provides evidence for an association with anovulatory cycles, which were suspected in 44/60 cases studied by the Mie group. This would accord with the concentration of cases soon after the menarche, and after childbirth.

Treatment

This comes under three headings: hormones, agents suppressing the menstrual process, and a miscellaneous group.

There are many claims of successful treatment with progesterone (38,44,49,51,96,103,191,193-196). In several other patients it had no effect (143,148,190). Occasional cases have responded to oestrogens (49,78,174) or androgens (144). Others have responded to combinations of steroid hormones and oral contraceptives (16,48,194), or testosterone plus progesterone (40). Thyroid hormones have been curative (106,148). The patient studied by Horwitz and Harris (197) relapsed when thyroid was stopped. There have been no randomised, double blind controlled trials.

A hint that menstrual suppression might solve the problem comes from claims that pregnancy is beneficial (10,12,14,21,24,27,65,111,136,198-200). The menopause has also brought recurrent or chronic illness to a close in certain instances (19,86,197,201,202). Evans (72) described a patient who was cured by ovariectomy. In other cases there was no improvement with the menopause – e.g., cases 10 and 11 of v. Krafft-Ebing (11) – while that of Kirn (87) became worse after the climacteric. In the days before hormonal treatments, castration or induction of an artificial menopause were tried several times (10,12,30,135,203,204). Indeed, there was a vogue for this in USA in the late 19th century. In the cases studied by Krömer (89), Ewald (81,82) and Bondarew (190), determined attempts at castration failed to stop the sequence. Danazol, a drug which (among other effects) inhibits gonadotropic hormones, arrests the menstrual process; it has been used successfully (151). The discovery of the releasing hormones introduced a new range of menstrual suppressant drugs: the gonadorelins. They have been used in many medical disorders related to menstruation, and I have used them to induce a remission in menstrual psychosis.

Clomiphene, which promotes normal menstruation, is a rational treatment in women with anovulatory cycles. It has been used in Japan (49,106,184,192) and also by Cookson (47), whose patient conceived, and suffered a post-abortion psychosis. Successful treatment with phenytoin (97) and acetazolamide (53) has been claimed.

The most important point is that, for this disorder, the narrow range of psychotropic drugs is greatly extended by unconventional treatments which can be tried in turn. Since this is a recurrent illness, long-term prospective single case studies are appropriate.

CONCLUSIONS

Menstrual psychosis is a forgotten disorder: less is now known than used to be known. To some extent this is due to a laudable scepticism on the part of psychiatrists. It is important to be sceptical about an association with menstruation, because women spend 40% of their reproductive lives in the premenstrual or menstrual phase. But this scepticism contrasts with the credulity of physicians. Among the hundreds of cases of menstruation-related medical illness, only two – porphyria (205) and hypersomnalism (131) – had the precise timing necessary for statistical tests. This compares with the 27 cases collected here, meeting strict criteria. But physicians have the advantage of biochemical and physiological measures, such as porphyrins, peak respiratory flow and electro-encephalography, which are more sensitive than symptoms.

The world literature consists mainly of case reports. These have a distorted temporal and geographical distribution, with many reported before the first world war. This unevenness is due to cultural and linguistic barriers, and nosological fashions. Most of the literature is French, German or Japanese. Many gems of clinical observation have disappeared from the canon of current knowledge. Some of these early case reports had inadequacies: lack of scepticism and accurate dating. There was a general failure to conduct long-term follow-up studies, studying the natural history of the disorder, and assessing the effect of childbirth and the menopause. But we should acknowledge the meticulous contribution of the German language authors, who have supplied more than half the best-established cases. I hope this review of 27 confirmed and 200 possible cases will bring this disorder back into the discourse of modern psychiatry. The value of this ancient literature is not "to amuse the mind by the remembrance of old words" (206), but to sharpen the focus of neuroscientific studies.

"Evidence-based medicine" is the shibboleth of the day. But its main agenda is the efficacy of treatment. We also need criteria for establishing the validity of our nosological concepts. Menstrual psychosis illustrates the quest for this validation. The data are mainly from case lore, but the identification of diseases will always start with clinical observation. This leads to provisional definitions, measurements of severity, epidemiology, treatment trials and aetiological investigations. At this stage, we can conclude that menstrual psychosis is a morbid phenomenon related to the bipolar and perhaps cycloid (acute polymorphic) group. In the clinic, all consultants should be aware of it, because treatment can be radical. In the universities and institutes it is an heuristic hypothesis. There are aetiological leads to be followed, including the Japanese work on anovulatory cycles (perhaps suggesting a role for unopposed oestrogen), and the prepubertal cases (suggesting an origin above the level of the pituitary-ovarian axis).

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SPECIAL ARTICLE

Migration, cultural bereavement and cultural identity

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Migration has contributed to the richness in diversity of cultures, ethnicities and races in developed countries. Individuals who migrate experience multiple stresses that can impact their mental well being, including the loss of cultural norms, religious customs, and social support systems, adjustment to a new culture and changes in identity and concept of self. Indeed, the rates of mental illness are increased in some migrant groups. Mental health practitioners need to be attuned to the unique stresses and cultural aspects that affect immigrants and refugees in order to best address the needs of this increasing and vulnerable population. This paper will review the concepts of migration, cultural bereavement and cultural identity, and explore the interrelationship between these three aspects of the migrant's experience and cultural congruity. The complex interplay of the migration process, cultural bereavement, cultural identity, and cultural congruity, along with biological, psychological and social factors, is hypothesized as playing a major role in the increased rates of mental illness in affected migrant groups.

Key words: Migration, cultural bereavement, cultural identity, cultural congruity, ethnic density

Mental health practitioners work in an increasingly multicultural world, shaped by the migrations of people of many different cultural, racial and ethnic backgrounds. People migrate for many reasons, including broadly political, socioeconomic and educational. The richness of this diversity of cultures, ethnicity, races and reasons for migration can make understanding experiences and diagnosis of illness challenging in people whose background and experience differ significantly from the clinician. Culture has an important role in the presentation of illness, and cultural differences impact upon the diagnosis and treatment of migrant populations in part due to linguistic, religious and social variation from the clinician providing care. Additionally, it appears that the incidence and prevalence of psychiatric disorders varies among people of different cultural backgrounds due to an interplay of biological, psychological and social factors.

The provision of healthcare is necessarily influenced by the demands of people of many different cultures, but relies on economic, social and political factors, and it is important that cultural differences be appreciated and understood to arrive at a correct diagnostic impression and treatment plan. The migration process itself can be stressful, depending upon the type and cause of migration, and can affect the mental health of migrating individuals and their families. Issues of cultural bereavement and identity occur with increased frequency among migrants and their families. This paper will review these concepts and how they impinge upon mental health and psychiatric care and, by so doing, help the clinician to identify and address these issues in a culturally sensitive way.

MIGRATION

Migration can be defined as the process of going from one country, region or place of residence to settle in another. The duration of this new settlement varies, but for the purposes of this paper the focus is on individuals who relocate either semi-permanently or permanently to another country. Also, urban-rural migration within the same country is not being discussed here. Migrants may move en masse or singly. For example, people who migrate for economic or educational reasons may move singly and at a latter date be joined by their families, whereas people who move due to political reasons may move en masse but with or without their families (1). Although not all people who migrate are from ethnic minority groups, it is of note that a significant proportion is. The multicultural nature of British society is supported by the 1991 census. Ethnic categories were first used in the UK in the 1991 census, at which time over three million people, or approximately 5.5% of the general population, were from ethnic minority (non-white) groups (2). Of these, 30% described themselves as black, black African or other and 28% described themselves as Indian; however, by the 2001 census the categories of ethnic ascription had increased and the proportion of ethnic minorities had increased to 7.9%. The minority ethnic population in the UK grew by 53% between 1991 and 2001, from 3 million people to 4.6 million people respectively. Indians were the largest minority group, followed by Pakistanis, people of mixed ethnic backgrounds, black Caribbeans, black Africans and Bangladeshis (3).

The history of migration to Britain highlights some of the reasons why people migrate. Significant migration to Britain started in the nineteenth century. Irish immigration has been marked by periods of influx and efflux to and from Britain, as people have come to either settle permanently or work temporarily with ultimate return to Ireland as a goal. Eastern European Jews came at the latter part of the nineteenth century to escape both religious persecution and poverty, with additional numbers arriving in Britain both before and after World War II. In the 1960s, employers, especially in urban areas, recruited people from the West Indies to fill low paying jobs which were less attractive to the local population. People from the Indian subcontinent migrated to Britain for educational and economic reasons, the peak of which occurred about the same time as the West Indian migration. Asian people expelled by Idi Amin's government came from Uganda in the late 1970s. The 1980s saw a change in the immigration laws limiting the numbers of people allowed to relocate to Britain (4). Today, people from around the globe choose to migrate to the UK as well as other developed countries, both legally and illegally, for better educational and employment opportunities, to escape persecution, to relocate after catastrophic events, including terrorism, disasters and war, and/or to join relatives who migrated at an earlier time.

Migration can be classified in a number of ways; e.g., by the reasons for the migration, the social class and education of the migrating people, the duration of relocation and the geographic distribution of the resettlement. Further, a distinction can be made in the classification of migrants according to whether their contact with the 'majority' or 'dominant' culture is deemed voluntary. Migrants can be classified as immigrants and sojourners when the change in their location results in contact voluntarily, whereas refugees are deemed to change their location involuntarily (5). For example, immigrants choose to migrate, and thus be in increased and regular contact with the 'majority' culture in preparation for migration, for potential economic and/or educational advancement, whereas refugees are forced to migrate, and thus be in contact with the 'majority' population involuntarily, to escape persecution. Additionally, rural-urban migration has been associated with economic and educational reasons for relocation, whereas migration across nations has been associated with economic, educational, social and political reasons (6).

The process of migration has been described as occurring in broadly three stages. The first stage is pre-migration, involving the decision and preparation to move. The second stage, migration, is the physical relocation of individuals from one place to another. The third stage, post-migration, is defined as the "absorption of the immigrant within the social and cultural framework of the new society". Social and cultural rules and new roles may be learnt at this stage (4). The initial stage of migration may have comparatively lower rates of mental illness and health problems than the latter stages, due to the younger age at the initial stage of migration and the problems with acculturation and the potential discrepancy between attainment of goals and actual achievement in the latter stages (7). It is worth noting that the stages are often not discrete and merge into one another.

It has been hypothesized that social adjustment and the prevalence of mental illness in migrants may be influenced by the duration of the relocation, the similarity or dissimilarity between the culture of origin and the culture of settlement, language and social support systems, acceptance by the 'majority' culture, access and acceptance by the expatriate community, employment, and housing (4). If the individual feels isolated from his or her culture, unaccepted by the 'majority culture' and has a lack of social support, a consequent sense of rejection, alienation and poor self-esteem may occur. During the stages of migration, there may be factors that predispose individuals to mental disorders. Pre-migration factors include the personality structure of an individual, forced migration, and persecution, among others. Migration factors include bereavement, culture shock, a discrepancy between expectations and achievement, and acceptance by the new nation are potential post-migration factors (8,9). These factors can be thought of as vulnerability factors along with biological, social and psychological variables. For example, personality structure can be thought of as a biological factor as well as in cultural terms. Personality is influenced by cultural factors and influences patterns of child rearing, responding to stress and accepting social support. National character and personality factors are interlinked.

Bhugra (6) reviewed four hypotheses explaining the relationship between migration and mental illness, specifically the higher rates of schizophrenia among some migrant groups in the UK, and proposed a fifth hypothesis. His hypothesis argues for an ethnic density effect on the rates of mental illness in migrant groups. Additionally, individuals who migrate from collectivistic or socio-centric societies, who themselves are socio-centric, into individualist or egocentric societies may experience feelings of alienation and mental distress, with consequent difficulty in settling into the new society. Social change, assimilation and cultural identity may be significant factors in the relationship between migration and mental illness (6,7).

CULTURAL BEREAVEMENT

The loss of one's social structure and culture can cause a grief reaction, as has been described by Eisenbruch (10,11). Migration involves the loss of the familiar, including language (especially colloquial and dialect), attitudes, values, social structures and support networks. Grieving for this loss can be viewed as a healthy reaction and a natural consequence of migration; however, if the symptoms cause significant distress or impairment and last for a specified period of time, psychiatric intervention may be warranted. Eisenbruch (11) has defined cultural bereavement as "the experience of the uprooted person – or group – resulting from loss of social structures, cultural values and self-identity: the person – or group – continues to live in the past, is visited by supernatural forces from the past while asleep or awake, suffers feelings of guilt over abandoning culture and homeland, feels pain if memories of the past begin to fade, but finds constant images of the past (including traumatic images) intruding into daily life, yearns to complete obligations to the dead, and feels stricken by anxieties, morbid thoughts, and anger that mar the ability to get on with daily life".

The expression of such bereavement is influenced by many factors, among which are social, cultural and economic. In a study of the palliative care experience of Bangladeshi patients and their carers in east London, recent migration, linguistic barriers, religious beliefs and financial issues impacted the ability to optimise pain control in patients and the grieving process of family members; burial of the deceased in Bangladesh and social support from family and friends were potentially helpful in the grieving process (12). The importance of culture in the expression of grief was highlighted by a case report of bereavement in an Ethiopian female refugee. Her symptoms of grief were complicated by her inability to perform her culturally sanctioned purification rituals because of her relocation. Compounding her problem, she was erroneously diagnosed at various times due to the use of Western derived diagnostic criteria and a lack of appreciation of the cultural differences in the presentation of grief by clinicians (13). The symptoms of cultural bereavement may be misdiagnosed due to problems with language, culture and the use of Western diagnostic criteria in non-Western peoples. Schreiber (13) noted that traditional healing and purification rituals as well as supportive psychotherapy, after the correct diagnosis was made, were essential in the treatment of this patient's syndrome.

Western constructs of bereavement may prove to be of only partial or limited value in explaining expressions of grief when applied to people from other cultures; however, this is an area worth further study. All human beings get bereaved, but the cultural norms are essential in dealing with bereavement. Western views of bereavement include the progression through stages of grief, psychoanalytic theories of loss, and behavioural theories. Davies and Bhugra (14) refer to Bowlby's contribution to the understanding of loss and the function and course of grief. In application of his attachment theory, Bowlby described four phases of mourning, including numbing, yearning and anger, disorganization and despair, and reorganization. Psychoanalytic theorists have described the role of the unconscious and ambivalence in grief; abnormal grief reactions are felt to be unconsciously driven and involve ambivalent feelings to the lost object with resultant depressive symptoms including significant decline in self-esteem (15,16).

The DSM-IV notes that the "duration and expression of 'normal' bereavement vary considerably among different cultural groups". A major depressive episode is diagnosed, instead of bereavement, if symptoms of depression are present two or more months after the loss or the following symptoms are present: a) guilt about things other than actions taken or not taken by the survivor at the time of the death; b) thoughts of death other than the survivor feeling that he or she would be better off dead or should have died with the deceased person; c) morbid preoccupation with worthlessness; d) marked psychomotor retardation; e) prolonged and marked functional impairment; and f) hallucinatory experiences other than thinking that he or she hears the voice of, or transiently sees the image of, the deceased person. These symptoms are based on a Western construct for the diagnosis of abnormal grief and as such do not take into account different cultural expressions of grief. In many cultures, it is normal to be visited by spirits and ghosts, and people of non-Western culture may describe conversations with supernatural spirits. The importance of placing these expressions of grief in the appropriate cultural context is essential in differentiating between abnormal and normal reactions to loss. Inappropriate diagnoses of psychotic disorders, post-traumatic stress disorder (PTSD) and mood disorders have been made in people of non-Western backgrounds when clinicians ignore cultural differences in the expression of grief. The misdiagnosis and subsequent inappropriate treatment will at best not address the issue for the affected person and, at worst, cause harm.

Eisenbruch (10), in his work with Southeast Asian refugees, devised a cultural bereavement interview as a means to help with the validity of the diagnostic interview, clarify the "structure" of the grief reaction, and start the process of healing for the affected individuals. The interview takes into account the language and cultural constructs of the bereaved individual. During the interview, the clinician explores the following: a) memories of family, based on the construct of thoughts and perceptions of the past; b) continuing experience of family and the past, including ghosts and spirits, based on the construct of communication with the past; c) dreams, guilt, clarity of recall of the past and structuring of the past in the homeland, based on the construct of survivor guilt; d) experiences of death, based on the construct of the violence of separation or death and the absence of leave-taking; and e) response to separation from homeland, based on the construct of anger and ambivalence (10). The cultural bereavement interview incorporates exploration of religious belief and practice, stressing the importance of 'traditional' treatments in the bereaved immigrant population. As noted above and continuing Schreiber's (13) notion, the collaboration of the Western psychiatrist with a traditional healer can represent for affected individuals the best treatment approach, which is one that embraces and integrates the non-Western belief system when using Western psychiatric approaches.

Bereavement has been associated with psychotic, anxiety and mood disorders; however, this association is complicated due to the misinterpretation of the cultural expressions of grief by Western trained clinicians and the Western diagnostic criteria of psychiatric disorders that may not be applicable in people of different cultural backgrounds. Undoubtedly, people who have migrated due to political upheaval or war may have witnessed or participated in combat and torture; thus, affected individuals may have PTSD and bereavement, as these diagnoses are not mutually exclusive. Culturally appropriate manifestations and expressions of bereavement may include Western constructs of PTSD and psychosis, including hearing voices, seeing ghosts and feeling the presence of the dead; therefore, it is important to recognize the symptoms of bereavement within the cultural constructs of the affected individual and be open to the possibility of additional psychiatric disorders. Cultural bereavement is an important aspect in the understanding of the migrant's experience. Our hypothesis is that such an experience will be mediated through and influenced by cultural identity. The concepts of individual identity are likely to affect the understanding as well as working through the bereavement process.

CULTURAL IDENTITY

It is important to define basic sociologic terms of identity to understand cultural identity. Culture is learned and passed through generations and includes the beliefs and value system of a society. Culture has been described as features that are shared and bind people together into a community (17). Identity is the totality of one's perception of self, or how we as individuals view ourselves as unique from others. Bhugra (6,7) notes that racial, cultural and ethnic identities form part of one's identity, and identity will change with development at a personal as well as at a social level along with migration and acculturation. Social identity can be thought of as the culturally defined personality characteristics, which are ascribed to social roles, such as the role of being a father, mother, friend, employer, employee, etc. Ethnicity is a source of social identity. Ethnic groups are composed of people who may or may not share the same race but do share common cultural characteristics, including history, beliefs, values, food and entertainment preferences, religion and language. Ethnicity typically incorporates both race and culture (17). Race is based on biologic constructs, such as sharing certain physical attributes; it may or not be also a social and political construct (17). For example, people from the West Indies, Africa and parts of North and South America may share the same race but have different beliefs, value systems, social norms and idioms of distress.

Bhugra (6) notes that components of cultural identity include religion, rites of passage, language, dietary habits and leisure activities. Religious rituals and beliefs, even if not followed as an adult, make up a key component of an individual's cultural identity. Religion can preserve values within the community and foster a sense of belonging. Rites of passage are important in the development of an individual's cultural identity; following these rites or rituals is bound to influence the degree to which an individual will be accepted within the cultural group. Language, both written and spoken, is a cultural marker. Bhugra (7) writes of the importance of linguistic competence and economic stability as determinant factors prompting individuals to eventually leave their non-dominant cultural group, which typically is geographically bound, and venture into the dominant culture. Attitudes to food and food preparation, including religiously driven taboos and the symbolism of food, are a component of cultural identity that can be influenced by religious teachings. Leisure activities, including music, movies, sports, and literature, are important components, along with language and religion, in allowing an individual to feel part of their culture while living in a place with a different culture and may or may not change during the acculturation process. Social and cultural qualities and attitudes are typically more resistant to change and are usually last to adjust during acculturation (18).

Psychosocial changes experienced by immigrants include assimilation, which can be viewed as a process by which cultural differences disappear as immigrant communities adapt to the majority or host culture and value system. An individual's cultural identity may be lost during the assimilation process as he or she moves within the host society. Acculturation, a process that may be voluntary or forced, requires contact between culturally divergent groups of people and results in the assimilation of cultural values, customs, beliefs and language by a minority group within a majority community (8). During the acculturation process, both the immigrant and host cultures may change. Changes in attitudes, family values, generational status and social affiliations can occur in both the majority and minority cultures as the two interact; however, typically one culture dominates (7).

Cultural changes in identity can be stressful and result in problems with self-esteem and mental health. Contact between the immigrant, or minority, community with the dominant or host community may lead to assimilation, rejection, integration or deculturation (8). Rejection, in which the individual or minority group withdraws from the majority group, can lead to apartheid or segregation in extreme cases. Deculturation, in which the individual or minority group experiences a loss of cultural identity, alienation and acculturative stress, can lead to ethnocide (6). Post-migration stresses include culture shock and conflict, both of which may lead to a sense of cultural confusion, feelings of alienation and isolation, and depression (8). Host societies' attitudes, including racism, compounded by stresses of unemployment, a discrepancy between achievement and expectations, financial hardships, legal concerns, poor housing and a general lack of opportunities for advancement within the host society, can lead to mental health problems in vulnerable individuals.

Acculturation may help the culturally bereaved individual to gain a semblance of equilibrium. Migrants who experience the loss of their culture and guilt over leaving their homeland may find that, as the acculturation process proceeds, a sense of belonging in their new homeland occurs. The majority culture may seem less threatening and more inviting as the individual becomes more linguistically and socially fluent in this new culture. Social support can ensue in the forms of friendships, employment opportunities, and medical care. Integration and assimilation can help reduce feelings of loss and grief as the migrant starts to incorporate aspects of the majority culture. In acculturation, the interaction of the migrant's culture with the majority culture of the new homeland is a dynamic and reciprocal process that can result in changes in the broader cultural group, enhancing the ability of people of the dominant culture to better appreciate and understand aspects of the immigrant's culture and recognize some of the needs of those who have migrated.

CULTURAL CONGRUITY

Migrating people come from diverse cultural backgrounds, with already formed cultural identities. As noted above, cultural identity is influenced by various factors both during and after the migration process, and cultural bereavement is a potential inherent consequence in people who have migrated. Cultural identities interact, as people who have migrated come into contact not only with people of the majority culture but also with immigrants of both similar and disparate cultures. Resultant feelings of a sense of belonging and comfort or a sense of alienation and distress may occur. Bhugra and Jones (9) proposed that various personal and relational factors during the migration process impact the mental well being of migrating people. During the post-migration phase, personal factors of importance in coping with adversity include cultural identity, social support networks, self-esteem, and self-concept. Achievement, racism, ethnic density, social isolation and unemployment are among the relational factors of importance in migrants during the post-migration phase (7,9).

Ethnic density, the size of a particular ethnic group in proportion to the total population in a specified area, may be a factor that influences the rates of mental illness in ethnic minorities. Additionally, a sense of alienation may occur if the cultural and social characteristics of an individual differ from those of the surrounding population, whereas a sense of belonging tends to occur if the individual and surrounding population have similar cultural and social characteristics. Bhugra (6) writes of the importance of ethnic and cultural congruity, interaction patterns and cultural identity in the genesis and maintenance of mental distress in migrants. Cultural congruity may be thought of as the congruence or dissonance of an individual's culture, beliefs and expectations with the surrounding population. The surrounding population may be made up predominantly of people from the same or different cultural background compared to the migrant. An increase in ethnic density may improve the social support and the adjustment of some individuals who have migrated, yet increase distress in others, in particular if there exists a cultural conflict between the individual and his culture of origin (9). This may account for some of the conflicting results from studies of the relationship between ethnic density and the incidence of mental illness in ethnic minority groups. For example, an inverse correlation between the incidence of schizophrenia in non-white ethnic minorities in London and the proportion of those minorities in the local population was found; it was hypothesized that increased exposure to or a lack of protection from stress may increase the rate of schizophrenia in non-white ethnic minorities (19); however, a previous study failed to support the ethnic density hypothesis for the increased incidence of schizophrenia in immigrant groups to England (20).

In a review of multiple studies, Shah (17) found that common mental disorders were more prevalent in people of ethnic minority groups who lived in areas of low density of their own ethnic group. His findings showed that common mental disorders were at least as prevalent in ethnic minority groups as in the indigenous population and, in some ethnic minority groups, more prevalent. Depression may be more prevalent in the Caribbean and African populations compared to the majority population, with phobias more common in Asian groups. Risk factors for common mental disorders in ethnic minority groups include poverty, unemployment, migration before the age of 11, racism, a perceived lack of social support, social isolation, absence of a confidante and absence of parents in law (17). The incidence of schizophrenia was higher in an urban area of south-east London compared to rural areas in south-west Scotland, due to the larger proportion of non-white ethnic minority groups living in the urban area compared to the rural area (21), with an overall increase in the incidence of schizophrenia in south-east London between 1965 and 1997 (22).

It is important to consider the nature of the society an individual has migrated from and to, and the social characteristics of the individual who has migrated, in determining how well a person will adjust during the migration process. Socio-centric, or collectivistic, societies stress cohesiveness, strong ties between individuals, group solidarity, emotional inter-dependence, traditionalism and a collective identity. Egocentric, or individualistic, societies stress independence, loose ties between individuals, emotional independence, liberalism, self-sufficiency, individual initiative, and autonomy. Bhugra (6) has hypothesized that individuals who migrate from predominately socio-centric, or collectivistic, societies into a society that is predominately egocentric, or individualistic, are likely to have problems adjusting to the new culture, especially if the individuals are socio-centric in their own belief system. A consequent lack of an adequate social support system, a disparity between expectations and achievements and a low self-esteem may result from this dissonance in culture between the individual and the surrounding population. An increase in ethnic density may help decrease the distress of the individual in this situation, especially by providing a social support system. For example, a person who migrates to the United States, a predominately egocentric society, from Vietnam, a predominately socio-centric society, may feel isolated and alienated, especially if the individual is socio-centric in outlook. Feelings of isolation and alienation may be decreased, and social support improved, if other people from Vietnam, with socio-centric views, surround this person in the area of resettlement; however, the socio-centric individual may remain on the periphery of his/her new homeland's society since linguistic and social fluency of the dominant culture may not be attained. Cultural bereavement may also be minimized if the immigrant is able to maintain ties to the culture of origin, either through increased ethnic density, improved social support or maintenance of religious beliefs and practice. On the other hand, individuals who migrate from a predominately socio-centric culture into a society that is predominately egocentric in nature may experience little in the way of problems, and a relatively easy transition to the new culture, if the person who has migrated is mostly egocentric, or individualistic, in his/her outlook. In this case, an increase in ethnic density may be disadvantageous and exacerbate or cause cultural conflict and mental distress.

CONCLUSIONS

The proportion of ethnic minorities in the UK has been increasing at least in part due to the migration of individuals from all over the world. Migration is a complex process, involving a heterogeneity of causes, experiences, cultural adjustment and stages, that influence the mental health of migrants. The stresses of the migration process itself combined with a lack of social support, a discrepancy between achievement and expectations, economic hardships, racial discrimination and harassment, and a lack of access to proper housing, medical care, and religious practice can lead to poor self-esteem, an inability to adjust, and poor physical and mental health. Social and cultural factors have been implicated in the aetiology of mental illness in immigrants and refugees, and further study is needed to better understand the role of culture as pathogenic or patho-protective (7).

Cultural bereavement, a paramount aspect of the migrant's experience, is influenced by, and mediated through, the interplay of the migration process, cultural identity and cultural congruity, along with biological and psychological factors. To appropriately guide diagnosis and treatment interventions, mental health practitioners must appreciate and recognize the socio-cultural factors that influence the manifestation of grief in people who have migrated. Cultural identity and congruity will affect the ability of the affected person to understand and work through the grieving process, and disturbances of identity and congruity are likely to lead to a pathologic, or complicated, bereavement.

Rates of depression, phobias and schizophrenia are elevated in some migrant groups. The understanding of race, ethnicity, social isolation and a lack of social support, racism, unemployment and poverty, poor housing and a lack of access to appropriate medical care is important in explaining the increased rates of mental illness in ethnic minority groups. Additionally, cultural congruity and ethnic density, cultural identity, and biological and psychological factors are likely important influences in the development of mental illness in migrants. With further study, a better understanding of the complex interplay of these potential vulnerability factors may eventually lead to preventative measures and lessen the burden of mental illness in this growing population.

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Prevention of substance abuse: a brief overview

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Recent advances in psychosocial research and neurosciences have provided new avenues for prevention of substance abuse at the individual and community level. A series of risk and protective factors affecting the likelihood of using and abusing substances have been identified. The scope of prevention has been broadened, allowing the prescription of different interventions for individuals according to their varying degrees of vulnerability to substance experimentation, continuous use and dependence. An increased awareness of comorbidity between mental and substance use disorders provides an arena for prevention within psychiatry and related disciplines. Emphasis on program evaluation has helped identify cost effective programs and policies. The integration of prevention within healthy life style policies and programs, including interventions at the school, family and community levels, is more likely to produce the desired outcomes.

Key words: Substances, abuse, dependence, prevention

The overwhelming effects of substance abuse on individuals, families and societies demand effective mechanisms of deterrence. While there is consensus about the importance of prevention, there is a lack of agreement over the best way to achieve it.

Prevention is understood as any activity designed to avoid substance abuse and reduce its health and social consequences. This broad term can include actions aimed to reduce supply (based on the principle that the decreased availability of substances reduces the opportunities for abuse and dependence) and actions aimed to reduce demand (including health promotion and disease prevention). Evidence from epidemiology suggests continuous shifts between periods of increasing and decreasing abuse of substances (1): prevention can modify the trend, generate or reinforce the downward shift, or help diminish the rising trend.

Reducing the supply of illegal substances has included efforts aimed at destroying crops, crop substitution, prosecution of big scale traffickers and substance dealers, and reduction of substance availability on the streets. Abuse of psychotropic and narcotic medicines with a dependence potential has been controlled through medical prescription and the application of specific regulations for the production and distribution of medical drugs and their precursors. Medical education has a crucial role to play in reducing the availability of prescribed substances for abuse (2).

Demand reduction can be accomplished through special programs aimed to modify those factors which make individuals vulnerable to substance experimentation, continuous use and dependence, as well as to promote protective factors in the individual and the environment.

The need for an integrated strategy of supply and demand reduction was recognized during the 20th Special Session of the United Nations held in New York in 1998 (3). In the Political Declaration, member states recognized that action against the substance problem was a shared responsibility requiring an integrated, balanced approach. The term "demand reduction" was used to describe policies and programs aimed at reducing consumer demand for narcotic and psychotropic substances covered by the international substance control conventions. The Declaration of Demand Reduction recognized the need to: a) *assess the problem*, in order to base prevention on a regular evaluation of the nature and magnitude of substance abuse and related consequences; b) *tackle the problem,* from discouraging initial use to reducing the negative health and social consequences, education, public awareness, early intervention, aftercare and social reintegration, early assistance and access to services for those in need; c) *forge partnerships*, through the promotion of a community-wide participatory and partnership approach as the basis for the accurate assessment of the problem and the formulation and implementation of appropriate programs, integrated into broader social welfare and health promotion policies and preventive education programs; d) *focus on special needs* of the population in general and of specific subgroups, with emphasis on youth; e) *send the right message* (the information utilized in educational and prevention programs should be clear, scientifically accurate and reliable, culturally valid, timely and, where possible, tested on a target population).

THE SCOPE OF PREVENTION

In the past, there was a tendency to regard primary prevention (interventions before the onset of symptoms) as the only true form of prevention. It is now recognized that effective prevention approaches are required before and after symptoms become apparent, since substance abuse disorders are chronic and relapsing or recurring in nature. Moreover, personal and financial costs can be largely attributed to episodes that follow a first onset, meaning that the prevention of recurrence and relapse – including relapse after successful treatment – is an essential aspect of a public health strategy to reduce prevalence.

Moreover, primary prevention has been classified into universal, selective and indicated, according to the level of risk of using substances (4). The US Institute of Medicine (5) defined *universal preventive interventions* as those targeting the general public or a whole population group. *Selective preventive interventions* are those aimed at subgroups of the population whose risk of developing the disorder is significantly higher than average (these persons may be at imminent risk or have a lifetime risk). *Indicated preventive interventions* were defined as those targeting high-risk individuals who are identified as having minimal but detectable signs or symptoms foreshadowing the disorder, or biological markers indicating a predisposition for the disorder, but who do not meet diagnostic levels at the present.

The scope of prevention also includes *early intervention* with individuals that have experimented with substances but are not severely dependent and may therefore be "reeducated" through learning interventions, as well as *treatment of dependence*, *relapse prevention* and *social reintegration*. It is now recognized that interventions within the whole spectrum reduce the burden of the problem for society.

The burden of substance abuse can be divided into two areas: intoxication and dependence. Limiting the damage to the individual and society from intoxication (i.e. driving under the effects of psychoactive substances) and reducing the risk of exposure to substances and thus of developing dependence, are essential components of prevention.

Reduction of harm is a somewhat different approach of prevention. This type of measures has been shown to reduce major health and social consequences. Examples of risk reduction measures include making clean syringes available, which has proved to reduce the risk for human immunodeficiency virus (HIV) infection and hepatitis B, or substitution treatment, which reduces crime levels in the streets (6).

A broad definition of prevention includes health promotion and prevention of disorders. The former aims to increase well-being by, for example, reducing inequities and building social capital (7), while the latter seeks to reduce incidence, prevalence, recurrence and time spent with symptoms, prevent relapses, delay recurrence and reduce the severity of symptoms. Decreasing the impact of illness on the person, the family and society is also considered part of prevention. Prevention also includes reduction of stigma, and consequently of barriers to treatment.

PSYCHOSOCIAL INTERVENTIONS

Variations in personal characteristics and in the socio-cultural environment create differences in the degree of vulnerability to substance experimentation, continuous use and dependence, meaning that prevention also needs to vary both in content and intensity.

Risk factors can be found in different domains: a) at the individual level (e.g., some mental disorders or a sensation-seeking personality); b) in the family (e.g., living with a depressed or substance dependent parent); c) at school (e.g., poor academic performance); d) among peers (e.g., friends that use substances), e) in the community (e.g., easy availability of substances, social tolerance). These factors interact with the individual process of receiving, elaborating, interpreting and responding to stimuli. The significance of these risk factors varies during the developmental stages (8,9).

The change in scope from prevention of substance use to the prevention of risk factors opened up new possibilities, particularly since it was expanded to include interventions at the early developmental stages. Nonetheless, it has also been observed that exposure to risk factors, even if these are extremely numerous, does not inevitably lead to substance use or escalation to dependence. In fact, children raised in problematic family environments, even if they live in environments where substances are easily available, may reach adulthood without having experimented with substances, due to the presence of *protective factors* that offset existing risk factors (9).

Protective factors can also be found in different domains: a) at the individual level (e.g., high self-esteem or a risk avoidance personality trait); b) in the family (e.g., living with parents able to meet their children's affective needs); c) at school (e.g., school adherence); d) among peers (e.g., close peers with a low tolerance of drug use); e) in the community (e.g., strong social networks). Although these factors can protect the individual from risk, they should not be regarded as the absence of risk. Risk factors indicate where it is necessary to intervene and protective factors show how to do so.

Preventive interventions should encompass disease-specific as well as more generic risk and protective factors. The latter are those common to several disorders and may create a wide spectrum of preventive effects such as poverty and child abuse. Disease-specific risk and protective factors are those that are mainly related to the development of a particular disorder: for example, social tolerance toward alcoholic inebriation and the lack of regulations concerning drunk driving are specifically linked to the likelihood of alcohol-related traffic accidents (10).

Broad contextual factors – such as inequity, poverty, neighborhood disorganization, lack of health and social services, availability of substances – are important determinants of the level of use and problems (7,8). It has been shown that, although the population with higher income levels consumes more substances, substance abuse has a greater impact on the poor, since it compounds their numerous everyday problems (11). Societies can reduce this burden by integrating social minorities, providing services and facilitating community networks (7).

EVIDENCE PROVIDED BY NEUROSCIENCE

Improved understanding of the neurobiological mechanisms underlying substance dependence can lead to better strategies to prevent substance involvement and dependence. A recent World Health Organization (WHO) publication on the neurosciences of substance use and dependence (12) summarizes recent findings in this field. Substances differ with respect to the specific receptors in the brain that they influence, but there are also considerable commonalities. Substance dependence is a disorder that involves the motivational systems of the brain, and despite the fact that each substance has unique mechanisms of action, all substances which cause dependence activate the mesolimbic dopamine system. The neural pathways that substances affect are the same as those involved in many other human behaviors, including eating, having sex or gambling. Dependence-producing substances differ, however, from conventional reinforcers in that their stimulant effects on dopamine release in the nucleus accumbens are significantly greater than natural reinforcers such as food (12).

Dependence-producing substances have the potential to produce positive effects on the individuals using them, that vary from minor effects such as reduction of stress to major effects such as the "high" or "rush" associated with the use of amphetamines, heroin or crack cocaine. The presence of the reinforcing mechanism explains why individuals use substances and establishes the basis for continuous use that is a necessary but not a sufficient condition for the onset of dependence.

Repeated exposure increases the reinforcing effects. This process is associated with marked changes in the dopamine mesolimbic system. There are both presynaptic changes (increased dopamine release) and postsynaptic changes (changes in receptor sensitivity). In addition, structural changes in output neurons in the nucleus accumbens and prefrontal cortex have also been seen following sensitization to amphetamines and cocaine. The final step in this process is substance dependence. This enduring process of sensitization can explain relapses after considerable periods of substance abstinence (12).

There seems to be no linear relationship between the amount of a substance used and the severity of dependence, and no single relationship between pattern of use and onset of dependence. On the basis of available knowledge, it is not possible to predict who will lose control and become dependent (12).

Knowledge drawn from neuroscience reinforces the need to prevent experimentation and escalation to use and dependence, as well as the need to prevent repeated exposure, by limiting availability, reducing opportunities to use substances and making the individual more resistant to substances through psychosocial interventions. Cognitive behavioral therapies act on the same motivational systems in the brain that are affected by substance dependence and seek to replace the motivation to use substances with the motivation to engage in other behaviors (12).

Underlying dependence are individual, genetic and environmental factors that can modulate the reinforcing effects of the first exposure to substances. Genetic differences can make the use of substances more or less pleasurable or aversive to a particular individual, can affect the toxicity of the substance, both in terms of overdose and of chronic health effects, the intensity of psychoactive effects and the likelihood of different aspects of dependence (12).

Genetic research has so far failed to identify which individuals will become dependent or will experiment with substances, but the significant modulation effects of genes suggest the need to advise individuals with first-degree relatives with substance abuse about their particular susceptibility.

One of the future outcomes of the improved understanding of the mechanisms underlying substance dependence might be the development of immunotherapies preventing substances from reaching the brain to produce their effects (12). Future research will have to prove this possibility.

Substance users differ in their motivation to use substances, which in turn influences the likelihood of success of interventions. The US National Institute on Drug Abuse (8) has suggested the existence of two broad categories: a) individuals that use substances to "feel better", perhaps in search of the positive effects of substances, often described as sensation seeking; b) those that use substances to avoid "feeling bad", perhaps as a means of self-treatment. In the former case, prevention should focus on finding alternatives to substance use, while in the latter it should concentrate on treating the underlying illness. The following section deals with the relation between substance abuse and mental disorders.

COMORBIDITY BETWEEN SUBSTANCE ABUSE AND MENTAL DISORDERS: IMPLICATIONS FOR PREVENTION

Despite the frequent co-occurrence of substance abuse and mental disorders, attention to this comorbidity is only recent, and individuals suffering from both disorders are usually treated in different contexts, which affects treatment outcome negatively (2). When anxiety, affective or externalized disorders pre-exist, there is evidence of a high level of attributable risk of developing substance dependence, which emphasizes the role of the early treatment of mental disorders as an effective preventive strategy.

According to Ghodse (2), five main categories of comorbidity can be identified, although for some patients it might not be clear which category they belong to: a) primary diagnosis of a major psychiatric illness with a subsequent (secondary) diagnosis of substance misuse which adversely affects mental health; b) primary diagnosis of substance dependence with psychiatric complications leading to mental illness; c) concurrent substance misuse and psychiatric disorder, with the former exacerbating or altering the course of the latter; d) the psychiatric disorder exacerbating the course of substance misuse; e) an underlying traumatic experience resulting in both substance misuse and psychiatric disorders.

The WHO (12) advanced four neurobiological hypotheses to explain this comorbidity: a) psychoactive substance use disorders and other mental illness are different symptomatic expressions of the same pre-existing neurobiological abnormalities; b) repeated substance administration leads – through possibly aberrant or excessive neuroadaptation to acute substance effects – to biological changes that have some common elements with the abnormalities mediating other mental illnesses such as depression; c) substance abuse reflects self-medication intended to reverse pre-existing abnormalities; d) mental illness and substance abuse are independent phenomena and co-exist merely by chance.

There are also other possible non-neurobiological reasons for this comorbidity, such as environmental factors related to early exposure to violence, growing up in environments lacking affection and caring, intense and continuous exposure to stress, lack of social networks, especially if they co-occur in socially disorganized environments with easy availability of substances.

Comorbidity of substance use disorders with mood and anxiety disorders has been reliably observed irrespective of culture and geographical location. In general the magnitude of comorbidity with psychiatric problems is greater for drug than alcohol abuse. There is a continuum in the magnitude of comorbidity as a function of the spectrum of the substance use category (use, problems, dependence) as well as a direct relationship between the number of comorbid disorders and the severity of substance use disorders (13).

Kessler et al (14) estimated the effects of mental disorders in predicting the subsequent first onset of substance use problems and dependence. They found that the odds ratios for effects on dependence ranged from 3.3 to 14 for anxiety disorders and between 4.4 and 18.6 for mood disorders. The latency between the onset of the primary mental disorder and that of the subsequent substance dependence showed a window of opportunity for preventive interventions: for most mental disorders, this latency period was of 5-8 years. Mental disorders were less powerful predictors of first substance use than of progressing from use to problem use and from problem use to dependence. Primary mental disorders were associated with approximately half of all cases of substance dependence: 54% among men and 48% among women.

EVIDENCE-BASED PREVENTION STRATEGIES

The recent interest in documenting the outcomes of prevention programs has provided some general principles for substance prevention. In general, multiple-component programs (school, family, community) have proved to be the most effective (8), particularly if they are incorporated into a wider perspective of healthy life styles rather than emphasizing what is forbidden or dangerous (2). Information in itself has proved to be insufficient: the most commonly used school programs have proved successful in modifying knowledge and attitudes, but sustained change is more difficult to achieve. Better results have been observed when programs include skills training components and when they can intervene in more than one of the steps in the chain from substance availability to having the opportunity to use substances, experimenting, continuous use, different levels of dependence and abstinence (8).

The US National Institute of Drug Abuse (8) has developed a list of principles for prevention, drawn from long-term research studies on the origins of substance abuse behaviors and the common elements of effective prevention programs. These include the following: a) prevention programs should enhance protective factors and reverse or reduce risk factors (the potential impact of specific risk and protective factors changes with age; early intervention with risk factors often has a greater impact than later intervention, by changing a child's life path away from problems and toward positive behaviors; while risk and protective factors can affect people of all groups, they may have a different effect depending on a person's age, gender, ethnicity, culture, and environment); b) programs should be tailored to address risks specific to population or audience characteristics; c) prevention programs should be long-term, with repeated interventions (i.e., booster programs) to reinforce the original prevention goals.

PREVENTION OF ALCOHOL ABUSE AND RELATED PROBLEMS

The legal status of alcohol poses different challenges and raises the possibility of prevention mainly in the form of introducing measures to regulate availability and maintain it at reasonably acceptable levels. Alcohol control measures are often unpopular and therefore difficult to incorporate into public policy. One of the main difficulties is that these measures may affect the economic interests of the governments and the industry, which in many cases prevail over public health considerations and thus over the well-being of the society.

In the 1980s, alcohol abuse began to be viewed from a public health perspective, with health problems being the focus of attention, and actions being recommended to deal with the agent (alcoholic beverages), the individual and the environment. Alcohol problems were no longer attributed to alcoholics, but considered to be derived from the patterns of use of the population as a whole. Problems were proved to be more prevalent in societies where abstention rates were high, frequent intake low, with alcohol use distributed among a few occasions when high quantities were consumed. Accidents and other alcohol-related problems were more often associated with events of intoxication than with alcohol dependence (15-17). Evidence also showed that social norms played an important mediating role between availability and problems.

This evidence gave rise to social regulations as a means of preventing problems. Several countries applied the lessons learned from prohibition, adopting measures that could reduce the burdens, but avoiding the extreme measures that had brought about considerable social problems. Restrictions of availability regained popularity, and led to the reduction of liver disease and accidents (18,19).

Confidence in treatment was reestablished when evidence showed that increased access to treatment led to reduced mortality due to hepatic cirrhosis (20,21). More recently, along with the evidence that small quantities of alcohol decreased the risk for some illnesses and increased life expectancy (22), control of alcohol intake and education on safe limits became more popular.

Several groups have analyzed the potential benefits and adverse effects of different control measures (23,24). The most effective measures have been related to *limiting the availability* of alcohol, with measures increasing prices through alcohol taxes proving to be the most effective, provided governments can control production and distribution, although price increases can also lead to smuggling and bootlegging. Establishing a minimum legal age for drinking and server liability, restrictions on hours and days of sale, and different availability by alcohol strength have shown to achieve positive results if adequately enforced.

Regulations on *drinking and driving* have also proved to be efficient. Measures such as lowered legal blood alcohol limits, that might include zero tolerance for young drivers, random breath testing and sobriety check points are also supported by evidence. Server intervention programs, that might include training staff and managers to identify and stop service for intoxicated patrons and handle aggression more effectively, have shown a moderate impact where implemented. *Early treatment interventions*, including mandatory treatment for recurrent drinking drivers, have also proved to be effective measures in the decrease of alcohol-related consequences, reducing costs for the individual, the family and the society as a whole. *Regulation of promotion* most common in the mass media, such as advertising bands or control of content in the advertisement, have shown to have some effect if enforced and monitored. *Education and persuasion*, including alcohol education in schools or universities and warning labels, have shown to change knowledge and attitudes but have no sustained effect on drinking. The best results are achieved through integrated policies.

CONCLUSIONS

There is enough information available to orient efforts to prevention of substance abuse. Psychiatrists can play a crucial role in developing suitable practices for prescribing medicines with the potential for dependence. Treatment of early onset mental disorders, screening for substance use with their patients and providing advice can help reduce the burden of the problem. Despite the advances in the field, there remains an urgent need to develop more efficient prevention strategies, while particular support should be given to multidisciplinary research including the evaluation of intervention programs. Better prevention strategies can be derived from learning more about how experience modifies the brain and the interdependence between genetic vulnerability and development, especially among children and adolescents exposed to substance use.

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The role of psychiatrists in prevention of psychoactive substance use and dependence: beyond clinical practice

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Regrettably, psychoactive substance use and substance use disorders are still on the periphery of attention of psychiatrists and mental health professionals in many parts of the world. Separation of psychiatric and substance abuse treatment services and research institutions, existing, for example, in USA and Russian Federation, complicates the problem even further. And this is in contrast with the evidence of the burden associated with psychoactive substance use and the potential of psychiatrists and their professional associations to contribute to reduction of this burden.

According to the World Health Report 2002 (1), 8.9% of global disease burden expressed in disability adjusted life years lost (DALYs) is attributed to psychoactive substance use. Tobacco and alcohol are responsible for a major part (8.1%) of the disease burden, with alcohol being the top risk factor for health in low mortality developing countries. Tobacco, alcohol and illicit drugs are responsible for 12.4% of all deaths worldwide. In some countries of Europe, like Scotland and Spain, deaths related only to opioid use account for as many as 25-33% of deaths in young (15-39 years) males (2). Negative social consequences of alcohol and drug use, like crimes, violence or traffic accidents, make the total burden on the societies even higher. Injecting drug use, often associated with drug dependence and particularly opioid dependence, is a driving force of HIV/AIDS epidemics in many countries of Europe, Asia, the Middle East and Americas, with a number of injecting drug users worldwide estimated to be around 13.2 million (3). Between 1990 and 1998, injecting drug users were the largest group among diagnosed AIDS cases in Western Europe, and since 2001 by far the largest group in the Eastern European Region (4). Often epidemics of drug use were followed by HIV epidemics, and successful and timely prevention of drug use could possibly prevent dramatic developments with HIV/AIDS. Prevention of psychoactive substance use and associated disorders becomes one of the top public health priorities.

However, as Medina-Mora correctly points out, while nobody argues about the importance of prevention, it is not easy to find consensus on the prevention strategies, particularly when evidence for effectiveness of some most popular preventive approaches, like abstinence-oriented school-based interventions, is not very compelling (5), and some effective strategies, like regulation of physical and economic availability of alcohol, are not being widely implemented for different reasons (6).

Developing comprehensive, effective and sustainable strategies of prevention of substance use and dependence requires strong involvement of health care professionals. Psychiatrists, dealing with most severe health consequences of psychoactive substance use and co-occurring psychiatric disorders, by professional training know the effects of substance use and mechanisms of dependence and their prevention and management. That gives them an advantage among health care professionals and determines their potential in the area of prevention of substance use and dependence. The role of psychiatrists in secondary prevention, aiming at early identification and management of substance abuse and dependence, or tertiary prevention, aiming at rehabilitation of substance dependent individuals, is quite straightforward. Regarding primary prevention of substance use disorders, it is worthwhile to mention that prevention of acute intoxication is a legitimate objective, as acute intoxication is a diagnostic category included in both ICD-10 and DSM-IV. This is particularly relevant regarding alcohol, taking into account the burden associated with acute alcohol intoxication. Preventing of drinking to marked intoxication, i.e. changing patterns of drinking in the individuals and populations at large, is an important objective of primary prevention of alcohol use disorders.

With a limited number of trained psychiatrists in many less-resourced countries, it is imperative to go beyond clinical practice to achieve significant public health impact on the scope of substance-related problem. It is critical for psychiatrists to be strongly involved in education, training and support of other health professionals, and first of all in primary health care, to increase their ability to identify and manage substance use disorders among their clientele. Health care professionals have also an important role in communicating the risks associated with psychoactive substance use or its specific patterns to the population, and psychiatrists have an important role in that as well.

Medina-Mora underlines a crucial role of psychiatrists in rational use of dependence-producing medicines. There are other areas where psychiatrists and their professional associations can contribute to prevention of substance use and dependence. One of them is the promotion and development of evidence-based concepts of substance use disorders and effective preventive and treatment strategies, guided by research evidence, which are not limited to management of substance dependence, but incorporate a wide range of preventive interventions, including those which are beyond the health care sector and those that aim at reduction of harm associated with continued substance use.

The role of psychiatrists and their professional associations in the reduction of the burden of substance use disorders has still to be realized.

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Substance abuse prevention: practical strategies for psychiatrists in the 21st century

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Strategies for health promotion and prevention require both population and individual level interventions. There is general face validity of the concept that an ounce of prevention is better than a cure. However, evidence to date on the effectiveness of these strategies is mixed.

Emerging knowledge on the biology and genetics of substance use and substance use disorders may help in the development of innovative approaches to prevention in this century. There are several human experimental studies trying to establish the safety and efficacy of cocaine and nicotine vaccines. What role could these immunization strategies play in the prevention of addictive disorders? (1).

María Elena Medina-Mora highlights the importance of understanding the interplay of biopsychosocial determinants of addictive disorders and clarifies the scope of prevention efforts beyond pure primary prevention. Patients with co-morbid addiction and mental health problems pose a special challenge to the clinician who wishes to implement effective prevention strategies (2). Using a broader understanding of prevention, clinicians, including psychiatrists, can play a key role in prevention within the context of co-morbid problems. They can routinely screen their patients for sub-clinical problems and provide early interventions, practice safe prescribing of medications to prevent iatrogenic drug dependence, immunize patients at high risk for hepatitis A and B, counsel patients on safe injection practices, tobacco cessation, use of condoms and the avoidance of high risk sexual activity. They can also offer testing for HIV infection, tuberculosis and other sexually transmitted diseases.

The lessons learned from alcohol control strategies could be applied to other substances of abuse. Prohibition created more problems than it solved, but an integrated approach that includes a combination of re-evaluating social norms and context to prevent harmful consumption and abuse has led to reduced problems. Overall, the focus on problem drinkers is likely to reduce the burden of disease more than a focus on the severely dependent. In a study involving 42 family practices with a total of 15,686 patients, 105 problem drinkers were identified and randomly assigned to a total of three hours of counselling over a year or advice to stop drinking. Counselling led to 70% reduction in consumption with significant improvements in psychosocial functioning, liver damage and a reduction in health care utilization (3).

Psychiatrists should also be strong advocates for the adoption of effective prevention policies. For example, in Canada, laws that deterred drinking and driving were associated with an 18% reduction in drunk driving fatalities (4). Moreover, light or moderate drinkers were more likely to abstain from drinking before driving after the introduction of laws that led to 90 day suspensions of driver licenses for breath alcohol concentrations greater than 80 mg% (5). There is evidence that comprehensive interventions targeted towards special populations such as pregnant drinkers can also have an impact. In Washington State, the presence of comprehensive diagnostic and prevention strategies reduced the incidence of fetal alcohol spectrum disorder (FASD), with enormous implications for children and society at large (6).

The success of early interventions and secondary prevention is predicated on the ability and willingness of frontline providers to implement evidence-based interventions to reduce the burden of disease caused by substance use. Moreover, in this millennium, clinicians also need to be aware of the new strategies in substance abuse prevention and advocate for effective prevention policies.

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How effective is substance abuse prevention?

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Two major phenomena can be observed in the field of prevention of substance use and abuse: on the one hand, a growing recognition of the need to systematically evaluate the effects of preventive interventions, and a growing body of knowledge on "what works"; on the other, a rather grim and disappointing picture of increasing substance use worldwide, with very significant negative social and health consequences. What is going wrong?

Research has provided insight into a vast range of risk factors for starting use, continuing use, developing harmful use and dependence. Increasingly, the search for protective factors has come to the forefront, and interventions have started to focus on reinforcing such protective factors. Concerted action at community level, prevention at the work place, working with multi-problem families are just a few of the key issues, complementing the formerly prevailing awareness campaigns and school programs that served more the need "to do something about prevention" than to do something based on evidence for effectiveness. Early recognition and intervention strategies, geared towards a reduction of hazardous and harmful consumption rather than towards abstinence, have generated manuals for practice and an increasing number of evaluation studies. In a broader sense, reducing risks and reducing negative consequences from substance use have become as important as preventing use or forestalling the start of use.

Evaluating preventive action has become part of an evidence-based policy; evaluation guidelines are produced; reviews have analyzed the accumulating knowledge. However, in spite of the growing body of evidence about how to avoid or reduce the negative consequences of substance use, the use and the related problems are on the increase in many countries. Hazardous and harmful alcohol use is especially on the rise, in developing countries as well as in Eastern Europe (1). Major increases in injecting drug use, with all associated health and social risks, are being recorded: opiate injecting is especially increasing in Eastern Europe and South and South-East Asia, which is leading to more blood-born HIV infection and hepatitis; amphetamine injecting is increasing in many regions worldwide (2).

The implementation of available preventive strategies in this area is largely deficient. Some factors can be mentioned which contribute to this "transfer gap". Most research evidence stems from Western style market economies, and their acceptability and applicability in the developing world has to be tested. Strategies must be culture specific and targeted. Regarding legal substances, the most cost-effective prevention strategies (taxation, conditioned availability, reduced promotion) are not high on political agendas and are not popular. The exception is tobacco smoking, some sort of a "success story" in substance abuse prevention, but only in countries with adequate levels of risk awareness, while cigarette marketing has shifted successfully to developing countries (3). It looks as if substance abuse prevention only has a chance as far as health promotion and consumer protection become relevant issues for health policy and the population at large.

Finally, there cannot be effective prevention without an understanding of why substances of abuse are so attractive and how most people manage to use them without losing control and without negative consequences. The recent results of brain research have demonstrated how stress increases the risk to develop substance dependence (4), and the "self-help" theoretical model (taking drugs for stress relief and enhanced emotional experience) is gaining from the insight that addictive behaviors are just one special form of a learning process. Prevention can profit from research on how people and especially young people learn to protect themselves against the risks of substance use (5). But, in the end, substance abuse prevention has limited chances in the presence of a growing economic inequity between and inside countries, and a widespread insecurity about the future (6).

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Substance abuse intervention in South Africa

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María Elena Medina-Mora highlights advances in psychosocial and neuroscience research that provide promising avenues for substance abuse intervention. She also reviews advances in thinking about individual vulnerabilities, risk and protective factors for substance abuse, mental health comorbidity and multi-component evidenced-based intervention programmes. This commentary comprises a reflection on these issues with reference to South Africa.

In the year 2000, a multi-sectoral coordinating body (the Central Drug Authority) was established in this country to oversee the implementation of the National Drug Master Plan (1). As part of ensuring an integrated approach to addressing substance abuse problems, the plan mandates government departments to formulate mini drug master plans and to establish provincial drug forums and local drug action committees. In line with United Nations recommendations (2), the plan also recognises the importance of research in directing policy and practice. In recent years, national surveys that included questions on substance use behavior (3,4) as well as surveillance systems on treatment demand and on alcohol-related mortality (5,6) have been funded. The Medical Research Council has also explored risk and protective factors for adolescent substance (ab)use (7,8). To further strengthen the research base underpinning substance abuse policy and practice in South Africa, various gaps need to be addressed, including intervention focused demonstration projects and regular audits of treatment services and prevention programmes.

Treatment services for substance abuse problems have not kept pace with the increase in demand, particularly by younger patients (5). The plan to reduce tertiary care services while increasing primary care services has not been implemented, and services remain insufficient to meet demand, poorly distributed geographically, and fragmented between health and social welfare sectors (9). Mental health and substance abuse problems are treated separately and services are not integrated. Gaps in the provision of aftercare services have also been noted (10). Apart from initiatives by some non-governmental organizations to educate young people about drug effects, and limited use of drug substitution for heroin patients, scant attention has been given to harm reduction. Many treatment programmes are not operating according to evidence-based treatment models. On the positive side, an initiative to develop norms and standards for inpatient treatment centres has recently been completed and steps have also been taken to institute protocols for managing the detoxification at secondary hospitals (9-11).

Progress has also been made in promoting ‘good practice’ in the prevention area. For example, with funding from the United Nations, guidelines on good practice for youth-focused prevention programmes have been developed (12). However, many initiatives still follow outdated practices such as once-off talks in schools that sometimes employ scare tactics. Furthermore, most initiatives focus on a single component. Specifically with regard to alcohol, initiatives have been implemented that focus on select populations (e.g. pregnant women) and the general public (e.g. via increasing taxes on alcohol) (9). New initiatives are being developed to restrict alcohol advertisements, to introduce warning labels on containers, and to institute a coherent liquor outlet policy at provincial level (9).

With regard to reducing the supply of illegal drugs, the South African government has recently implemented several changes in policy and practice, including setting up programmes to better monitor the importation and manufacturing of precursor chemicals, tightening up on banking procedures to make money laundering more difficult, and pursuing persons involved in organized crime more vigorously by using asset forfeiture provisions.

In conclusion, while some progress has been made in South Africa over the past decade, much more needs to be done to ensure that the advances described by Medina-Mora are reflected to a greater degree in policy and practice.

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Prevention of substance abuse: the Indian experience

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In her review, María Elena Medina-Mora addresses the issue of prevention of substance abuse from various perspectives. As she points out, psychosocial interventions remain the cornerstone of this prevention. Recent years have seen developments both in primary and in early secondary prevention. The latter focuses on individuals who have developed minimal or no complications related to drug abuse. Brief interventions, many of which are based on the FRAMES (feedback, responsibility, advice, menu of strategies, empathy, and self-efficacy) model (1), have shown promise, and their easy administration make them particularly attractive for use in the third world, where trained manpower may not be available.

In India, there have been many steps taken by various governmental and non-governmental agencies in the area of prevention of substance abuse. A major achievement has been the recent inclusion of information on substance abuse as an obligatory component of the school curriculum. On the demand side, the Ministry of Health and Family Welfare has established several de-addiction centers which are mostly based at the district hospital level: there are about 130 such centers spread across the country now. A Narcotic Drugs and Psychotropic Substances (NDPS) Act was passed in 1985 and amended in 1989. In 1999-2000, the Ministry of Social Justice and Empowerment, along with the United Nations Office for Drugs and Crime, undertook for the first time a major national study on the extent, patterns and trends of substance abuse in the country, a major component of which was a national household survey (2). This seminal study has become the basis for planning of substance abuse prevention and treatment strategies. An inter-ministerial collaborative effort has already been initiated.

Harm reduction has been discussed as a primary preventive strategy and may well be considered as a tertiary preventive strategy to reduce disability and dysfunction. In India, buprenorphine has been available as 0.4 and 2 mg tablets for almost a decade now and is being used for the maintenance treatment of opioid dependent subjects.

Substance abuse can be addressed at the individual level, at the local level (societal, national, etc.) and at the cross-national level. At the individual level, there has to be a synthesis of biological understanding with the exploration of background socio-cultural factors. In spite of the availability of services, their utilization is poor and the role of stigma and anti-stigma measures needs emphasis. At the national and cross-national level, there has to be a concerted effort of all the countries in managing the issue of substance abuse, taking into account the local socio-cultural and political scenarios.

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Don't drink and drive: the successful message of Mothers Against Drunk Driving (MADD)

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Tremendous efforts are expanded to prevent the burden of psychoactive substance use on users, their families and society in general. Yet, globally substance use is growing due to changes in lifestyle, the erosion of powers of censure that have existed in traditional societies and an increased acceptance of such substances. In this commentary, I briefly analyze the ingredients of a successful targeted intervention in North America over the last 20 years against driving while under the influence of alcohol.

The high visibility of a focused consumer group. Since the late 1970s, one of the most visible grassroots organizations, Mothers Against Drunk Driving (MADD), had a significant influence in addressing the problems caused by drunk driving. Born from the grief of a mother, Candy Lightner, whose daughter was killed in broad daylight by a hit-and-run drunk driver whose record involved four prior drunk driving arrests, the organization started in California was soon to grow to several hundred chapters across North America (1). MADD not only fought for harsher penalties against drunk drivers, but developed a range of programs to assist victims in coping with their loss.

A legislative agenda. Since its inception, MADD has been successful in the enactment of more than 1000 new laws at both the local and national levels, including minimum drinking age, server liability laws and sobriety check points. A particularly effective measure was the production and dissemination of a widely published, annual comparative legislative "Rating of the States/Provinces". In fact, MADD appears to have exhibited a stronger influence than the Breathalyzer legislation in reducing drinking-driver fatalities. As an example, in Ontario, Canada, the formation of MADD was associated with a decrease in drinking-driving fatalities in the period between 1982 and 1996 ranging from 19% to 23% (2). While many changes have been introduced, a proposed reduction of the blood alcohol content (BAC) limit to 0.05 has not achieved a consensus so far.

Services for victims. Grief resulting from a drunk driving crash is not unlike that in which a family member is murdered. The loss is sudden and unanticipated, the death is violent, the crime is senseless. MADD membership fulfills the survivors' compelling desire "to do something", often after a draining courtroom experience. MADD chapters have also provided an opportunity to participate in a victim impact panel as part of driving while impaired (DWI) offenders programs with mixed published results (3). MADD membership reportedly results in a trend of gradually positive attitudes until approximately the 4th or 5th year of activism after which many members will cycle out of the organization.

Influencing social norms. Widespread youth and community programs have resulted in a modification of social norms, arguably the ultimate success in prevention. Drunk-driving "accidents" become "crashes caused by criminal negligence", altering a collective moral mentality. Random breath testing has also resulted in the promotion of "designated drivers" volunteers, whereby one person will elect not to drink to provide safe transportation for the remainder of the party. Free soft drinks will often be provided by the drinking establishment to this driver. This promotion acquires more mass media visibility around year end holidays. Introduction of these measures have had the uniform effect of reducing the incidence of offending drivers who drink over the prescribed limit. There also seems to be a dose effect, as the effect of the restriction appears to be sensitive to the number of random tests per licensed driver (2).

The availability of valid and reliable monitoring data. Alcohol being a legal substance in many countries allows for a degree of monitoring sophistication which is lacking in the study of most illegal psychoactive substances. Drunk-driving statistics provide an objective index of impact influenced by the changes in the availability of alcohol, particularly in countries where random breath testing is legislated and enforced. While clearly not every instance of intoxicated or disabled drinking is recorded, these statistics are a useful barometer of the influence of focused limits on the availability of alcohol on the drunk-driving environment (4).

In summary, the preventive efforts of MADD provide an opportunity to study the impact of a grassroots organization on improving targeted social norms for a licit substance.

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Choosing cost-effective interventions in psychiatry: results from the CHOICE programme of the World Health Organization

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There is increasing recognition at both the international and national level of the disease burden attributed to psychiatric disorders, yet little is known about how much of this burden is or could be averted by current or scaled-up implementation of effective interventions. In addition, little is known about the costs and cost-effectiveness of such interventions in most regions of the world, even though such information is of direct relevance to increased investment and service development. This research report provides an overview of the mental health component of the World Health Organization's CHOICE project, the aim of which is to generate cost-effectiveness evidence for a large number of interventions for leading contributors to disease burden in a range of geographical and epidemiological settings around the world. To date, expected costs (expressed in international dollars) and effects (measured in terms of disability adjusted life years, DALYs) of key pharmacological and psychosocial interventions have been modelled for schizophrenia, bipolar disorder, depression and panic disorder. The results of this analysis indicate that the most efficient interventions for common mental disorders (depression and panic disorder) can be considered very cost-effective (each DALY averted costs less than one year of average per capita income), while community-based interventions for more severe mental disorders using older antipsychotic and mood stabilising drugs meet the criterion for being cost-effective (each DALY averted costs less than three times the average annual income). These findings provide relevant new information to health policy makers regarding the relative value of investing in psychiatric care, and in so doing may help to remove one of many remaining barriers to a more appropriate public health response to the burden of these conditions.

Key words: Costs, cost-effectiveness, DALYs, evidence-based treatment, mental health

Recent epidemiological research has clearly demonstrated the considerable (and previously underestimated) burden that mental disorders impose on individuals, communities, and health services throughout the world (1). Using a summary measure of population health, called the disability-adjusted life year or DALY (a time-based measure that combines in a single indicator years of life lost from premature death and years of life lived with a disability), the most recent estimates from the Global Burden of Disease study indicate that neuropsychiatric disorders contribute to more than 10% of lost years of healthy life and over 30% of all years lived with disability (1). The study showed in particular that unipolar depressive disorders place an enormous burden on society, in fact ranked as the fourth leading cause of burden among all diseases, accounting for over 50 million lost years of healthy life worldwide (2).

To date, however, only a limited connection has been made between DALYs and the generation of cost-effectiveness evidence, despite the fact that such a link was a central aim of the Global Burden of Disease study. The link is needed because DALYs are *not* in themselves sufficient as a mechanism for resource allocation and priority-setting in health care. A disease can place a considerable burden on a population but, if appropriate strategies or interventions to reduce this burden are absent or extremely expensive in relation to the health gains achieved, large-scale investment would be considered misplaced (since scarce resources could be more efficiently channelled to other burdensome conditions for which cost-effective responses are available). In other words, the size of the *attributable* burden alone is not sufficient to guide action. For priority-setting and resource allocation, a more pertinent question is to ask what is the *avertable* burden of a particular disease arising from the use of an evidence-based set of interventions and what is the relative cost of their implementation in the target population. Such an analysis can reveal the most efficient response to the attributable burden of a particular disease.

The last two decades have seen an ever-increasing interest in, and demand for, economic analysis of mental health care and policy, fuelled by government concerns about rises in health care expenditures (3). Considerations of cost and cost-effectiveness enter into health care reform processes, priority-setting exercises within and across health programmes, and regulatory decisions concerning drug approval or pricing. Despite the need for cost-effectiveness evidence, however, there remains a relative paucity of completed mental health economic evaluations from both developed and developing countries (4). The preponderance of completed economic evaluations in mental health care have been concerned with specific treatment modalities for psychoses and affective disorders, in particular the cost-effectiveness of different psychotropic medications and, more recently, various psychotherapeutic approaches to the management of these psychiatric disorders (5,6). Many mental health economic studies undertaken to date suffer from sub-optimal design, an unclear cost perspective, or inadequate power. There is a consequent requirement to derive more appropriately powered and generalized estimates of both the costs and relative cost-effectiveness of interventions in order to usefully inform mental health policy and planning, both at the national and international level.

Development of such an economic evidence base in mental health can be achieved in two ways. Preferably, it would be generated on the back of additional empirical studies in a range of socioeconomic settings (particularly developing countries, where current evidence is most scarce). Well-designed and sufficiently-powered economic evaluations of mental health interventions are certainly needed and valuable, but they are also difficult, time-consuming and expensive to carry out (as well as having limited application beyond the immediate confines of the study location), meaning that it is very unlikely that a sufficient evidence base will be generated in this incremental and relativist manner, even within the next 10 years. Alternatively, and more immediately, the current information vacuum can be filled via appropriate disease modelling of best available existing data concerning the expected costs and effects of interventions in these different settings.

The danger of the latter, more universalist approach lies in the inevitable assumptions that are required when basing cost-effectiveness estimates on a variety of sources from different places, while the obvious attraction is that policy-relevant results can be generated rather quickly and cheaply. Over the longer-term, these two approaches can in fact be considered complementary – empirical studies feed into initial and revised modelling exercises, while modelling studies synthesise and may even stimulate empirical research studies – but this should not detract from the shorter-term need in most regions of the world to bring cost-effectiveness arguments into play when arguing for an increased level of resource investment to and prioritisation for mental health service development.

METHODS

Selection of psychiatric disorders and interventions

Three key criteria guided the choice of psychiatric disorders to which this sectoral approach to cost-effectiveness analysis has been applied: public health burden and importance; the availability of effective and potentially cost-effective interventions; and the availability of data on epidemiology, clinical effectiveness, resource utilisation and costs. Concerning the first of these criteria, schizophrenia, bipolar disorder, (unipolar) depression and obsessive-compulsive disorder (OCD) all appear in the ten leading causes of disability worldwide (1). For each of these burdensome conditions, a set of personal interventions covering key psychopharmacological and psychosocial treatments was identified and reviewed; international evidence for the effectiveness of specific health care interventions was sufficiently robust for all of the above conditions except OCD (as a result of which, panic disorder was selected as the index condition covering anxiety disorders). A full list of interventions subjected to economic analysis is given in Table 1.

Table 1 Interventions for psychiatric conditions subjected to economic analysis

Disorder	Intervention
Schizophrenia Treatment setting: hospital outpatient Treatment coverage (target): 80%	Older (neuroleptic) antipsychotic drug Newer ('atypical') antipsychotic drug Older antipsychotic drug + psychosocial treatment Newer antipsychotic drug + psychosocial treatment
Bipolar disorder Treatment setting: hospital outpatient Treatment coverage (target): 50%	Older mood stabilising drug Newer mood stabilising drug Older mood stabilising drug + psychosocial treatment Newer mood stabilising drug + psychosocial treatment
Depression Treatment setting: primary health care Treatment coverage (target): 50%	*Episodic treatment* Older (tricyclic) antidepressant drug Newer antidepressant drug Psychosocial treatment Older antidepressant drug + psychosocial treatment Newer antidepressant drug + psychosocial treatment *Maintenance treatment* Older antidepressant drug + psychosocial treatment Newer antidepressant drug + psychosocial treatment
Panic disorder Treatment setting: primary health care Treatment coverage (target): 50%	Benzodiazepines Older (tricyclic) antidepressant drug Newer antidepressant drug Psychosocial treatment Older antidepressant drug + psychosocial treatment Newer antidepressant drug + psychosocial treatment

WHO guidelines on cost-effectiveness analysis

The World Health Organization (WHO), through its CHOICE work programme (CHOosing Interventions that are Cost-Effective), proposes a form of cost-effectiveness analysis that provides policy makers with a set of results that are generalisable across settings (7). It does this by evaluating the costs and effectiveness of new and existing interventions compared to the starting point of doing none of the current interventions. Importantly, the use of such a common reference removes the constraint that the current intervention mix must be continued and eliminates differences in starting points, which make the results of incremental analysis difficult to transfer across settings. Only one constraint remains, the budget, which allows simple decision rules to be developed based on the calculated cost-effectiveness ratios. Cost-effectiveness results can be used to define three broad sets of interventions – those which improve population health a great deal for a given set of resources; those which are not efficient ways to improve health; and those which are in between. This information enters the policy debate to be weighed against the impact of different intervention mixes on other objectives such as reducing health inequalities and responding to the legitimate expectations of populations. Policy makers can then assess if it is in the country's best interest to retain the current portfolio of interventions or modify it.

Key steps in the application of sectoral cost-effectiveness analysis

The application of generalised cost-effectiveness analysis in a systematic and standardised manner involves a number of key analytical steps that touch upon a diverse yet inter-related set of disciplinary areas, including demography, epidemiology, clinical effectiveness, cost analysis and health economics.

Step 1: Construct a profile of observed epidemiology. WHO-CHOICE pursues a population-based, epidemiologically-based approach to cost-effectiveness analysis. Accordingly, for the disorder and population in question, the first analytical step is to generate a profile or model of the prevailing epidemiological situation. The standard reference point for such a profile is the latest version of the Global Burden of Disease study (1), which provides empirically-based but internally consistent estimates of the incidence, prevalence, remission and case-fatality for all leading causes of disease burden globally.

Step 2: Construct natural history models. A particular feature of WHO-CHOICE is its use of a no treatment scenario as a basis for comparing the relative costs and consequences of different health interventions (7). For psychiatric conditions, natural history models were used (rather than a process of back-adjustment from existing effective coverage of interventions in the population). However, for some mental disorders and in certain regions of the world, it should be noted that at a population-wide level the current situation is in fact a very good approximation of the no treatment scenario (typically because so little intervention is taking place).

Step 3. Calculate population-level intervention effectiveness. Intervention effectiveness was determined via a state transition population model, which traces the development of a regional population taking into account births, deaths and the disease in question. Key transition rates, each expressed in terms of number of events per year at risk, include the incidence of the disorder in the population, case-fatality and remission. In addition, a disability weight is specified (on a 0-1 scale) for time spent in different states of (ill-)health. Two epidemiological situations are modelled over a lifetime analytic horizon, to give the total number of healthy years lived by the population: a) a counterfactual epidemiological situation representing the natural history of disease (no interventions in operation); and b) the epidemiological situation reflecting the population-level impact of each specified intervention (such as reduced illness duration resulting from use of an antidepressant drug), implemented for a period of 10 years. The difference between these two simulations represents the population-level health gain (measured in DALYs averted) due to the implementation of the intervention, relative to the situation of doing nothing. DALYs averted are discounted (at 3%) but not age-weighed in the base case analysis reported below.

Changes in parameters resulting from successful intervention need to reflect effectiveness rather than efficacy, so as a minimum it is necessary to make adjustments for expected intervention coverage rates at the population level as well as patient-level adherence to treatment. Sources of data for intervention efficacy and effectiveness included meta-analyses, systematic reviews and individual clinical trials reported in the international literature. Estimation of treatment effectiveness for specific disorders are reported in detail elsewhere (8-10).

Step 4: Construct resource utilisation and cost profile(s) for each intervention. An 'ingredients' approach to the costing of health interventions has been used, which requires separate identification and valuation of the quantity of resource inputs needed (such as numbers of health personnel) and the price or unit cost of those resource inputs (such as the salary of a health professional). For patient-level resource quantities (e.g. hospital inpatient days, outpatient visits, medications, laboratory tests, etc.), information sources include data from economic evaluations and also a multinational Delphi consensus study specifically undertaken for WHO-CHOICE and neuropsychiatric disorders (11).

Unit costs associated with these items of service use have been calculated for each World Bank region, based on an econometric analysis of a multinational dataset of hospital costs, using gross domestic product per capita (plus other explanatory variables) to predict unit costs in different regions (12). In addition, programme costs were computed, which are resources that are used in the production of an intervention at a level above that of the patient or providing facility, including central planning, policy and administration functions, as well as resources devoted to training health providers. All baseline analysis costs for the 10-year implementation period were discounted at 3% and expressed in international dollars (I$), which adjust for differences in the relative price and purchasing power of countries and thereby facilitate comparison across regions. That is, one international dollar buys the same quantity of health care resources in China or India as it does in the United States of America.

Step 5: Cost-effectiveness analysis (including uncertainty). The assembly of the various data components described above provides the building blocks for analysis of the costs and effects of a mental health care intervention. Once input values for these data components have been finalised, summary results for population-level costs, effectiveness and cost-effectiveness can be generated, including the comparative efficiency of specified interventions, expressed as average and incremental cost-effectiveness ratios (CERs) of I$ per DALY averted. In common with any robust economic evaluation, it is important to provide an indication of the uncertainty around point estimates of cost, effect or CER. Firstly, a series of one-way sensitivity analyses that assess the impact on final results of discounting and age-weighing can be performed. Secondly, best and worse case scenarios incorporating upper and lower values for key drivers of cost (unit price of drugs and health care services, the proportion of cases using secondary services) and treatment effectiveness (efficacy and adherence) can be generated. In addition, a stochastic uncertainty analysis was performed of the probability that individual interventions – including both current and new interventions – would be selected as a cost-effective use of resources given a specified budget constraint (7).

RESULTS

Estimation methods, baseline results and uncertainty analyses for individual conditions are reported in detail elsewhere, either by WHO epidemiological sub-region (8, 9) or by World Bank region (10). Here, summary estimates of the population-level effects (measured in DALYs averted) and cost-effectiveness of each intervention are presented by World Bank region for the four psychiatric disorders selected for analysis (Tables 2-3).

Population-level effectiveness of interventions

Even at a treatment coverage rate of 80% (i.e. four out of every five cases), the impact of pharmacological treatments for schizophrenia – whether with older neuroleptics or newer antipsychotic drugs – is modest (150-250 DALYs averted annually per one million population), reflecting the fact that interventions do not reduce the incidence or duration of the disease so much as making a difference to the day-to-day functioning of treated patients (approximately a 25% improvement over no treatment when treated with antipsychotic drugs alone, or closer to 45% when given adjuvant psychosocial treatment in addition) (13, 14). However, it needs to be emphasised that the full consequences of this often-catastrophic disease (on family life and the ability to be productive) are not adequately captured by the DALY metric. The addition of psychosocial treatment to pharmacotherapy is projected to have a far more pronounced benefit than switching from older to newer antipsychotic drugs (Table 2). Such a trend is also apparent for bipolar disorder, but with the added projection that, due to its established impact on reducing suicide, the older mood stabilising drug lithium is expected to generate more health gain in the population than newer mood stabilising drugs such as valproate (9). At a target coverage rate of 50%, health gains for the treatment of bipolar disorder and panic disorder are both in the range 150-400 DALYs averted annually per one million population, whereas episodic treatment of depression with antidepressants and/or psychotherapy generate much larger gains (600-1,200 DALYs averted), in large part due to the higher prevalence of this disorder in the population. Proactive, maintenance depression treatment has higher health returns still (1,200-1,900 DALYs averted), because in this scenario a significant proportion of recurrent depressive episodes would be prevented (8).

Intervention costs

The total cost per capita of community-based outpatient treatment with first generation antipsychotic or mood stabilising drugs, including all patient-level resource needs as well as infrastructural support, ranged from I$ 0.80-1.10 in Sub-Saharan Africa and South Asia to I$ 3 in the Latin America and Caribbean, and Europe and Central Asia regions (equivalent patient costs per year, I$ 300-550 and I$ 800-1,500 respectively). The cost per capita for second generation (atypical) antipsychotic drugs still under patent is much higher (I$ 3-7). By contrast, some of the newer antidepressant drugs (selective serotonin reuptake inhibitors, SSRIs) are now off patent and accordingly their use in treating depression and panic disorder was costed at their generic, non-branded price. The patient-level cost of treating a six-month episode of depression ranged from as little as I$ 50 (older antidepressants in Sub-Saharan Africa or South Asia) to I$ 150-200 (newer antidepressants in combination with brief psychotherapy in Latin America and Caribbean, and Europe and Central Asia). Total annual costs for all incident depressive episodes in receipt of treatment, including training and other program-level costs, were as much as I$ 2.50-6.50 per capita for a maintenance treatment program, three or four times more cost-

Table 2 Population-level intervention effects (DALYs averted per year per one million population)

		World Bank Region					
		Sub-Saharan Africa	**Latin America & Caribbean**	**Middle East & North Africa**	**Europe & Central Asia**	**South Asia**	**East Asia & Pacific**
Total population (million)		*640*	*502*	*482*	*462*	*1,242*	*1,827*
	Coverage						
Schizophrenia[1]							
Older (neuroleptic) antipsychotic drug	80%	149	219	214	254	177	231
Newer antipsychotic drug	80%	160	235	230	273	190	248
Older antipsychotic drug + psychosocial treatment	80%	254	373	364	353	300	392
Newer antipsychotic drug + psychosocial treatment	80%	261	383	373	364	308	403
Bipolar disorder[1]							
Older mood stabilising drug (lithium)	50%	292	336	296	381	319	389
Newer mood stabilising drug (valproate)	50%	211	300	273	331	278	351
Older mood stabilising drug + psychosocial treatment	50%	312	365	322	413	346	422
Newer mood stabilising drug + psychosocial treatment	50%	232	330	300	365	306	386
Depression							
Episodic treatment: older antidepressant drug (TCA)	50%	599	995	920	874	987	891
Episodic treatment: newer antidepressant drug (SSRI)	50%	632	1,049	971	925	1,042	941
Episodic psychosocial treatment	50%	624	1,036	958	936	1,028	927
Episodic psychosocial treatment + older antidepressant	50%	745	1,237	1,144	1,100	1,228	1,107
Episodic psychosocial treatment + newer antidepressant	50%	745	1,237	1,144	1,100	1,228	1,107
Maintenance psychosocial treatment + older antidepressant	50%	1,174	1,953	1,806	1,789	1,937	1,747
Maintenance psychosocial treatment + newer antidepressant	50%	1,174	1,953	1,806	1,789	1,937	1,747
Panic disorder							
Anxiolytic drug (benzodiazepine)	50%	144	182	170	183	168	195
Older antidepressant drug (TCA)	50%	232	290	272	290	269	312
Newer antidepressant drug (SSRI; generic)	50%	245	307	287	307	284	330
Psychosocial treatment (CBT)	50%	233	292	273	292	270	313
Older antidepressant + psychosocial treatment	50%	262	329	308	329	304	353
Newer antidepressant + psychosocial treatment	50%	276	346	324	346	320	372

[1] Results for community-based service model presented here only (hospital-based service model not shown); CBT - cognitive behavioural therapy; DALYs - disability-adjusted life years; SSRI - selective serotonin reuptake inhibitor; TCA - tricyclic antidepressant

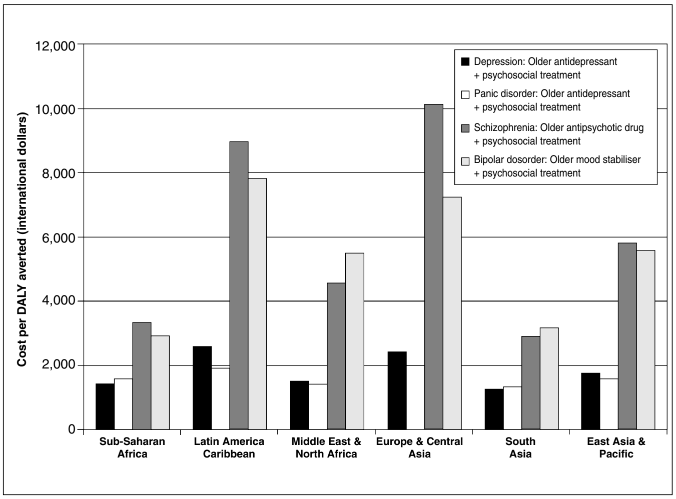

Figure 1 Cost-effectiveness ratios for a basic mental health package in low- and middle-income regions of the world

ly than episodic treatment with older antidepressant drugs only.

Cost-effectiveness of interventions

Compared to the epidemiological situation of no treatment (natural history), the most cost-effective strategy for averting the burden of psychosis and severe affective disorders is expected to be a combined intervention of first generation antipsychotic or mood stabilising drugs with adjuvant psychosocial treatment delivered via a community-based outpatient service model, with a cost-effectiveness ratio close to I$ 3,000 in Sub-Saharan Africa and South Asia, rising to I$ 8,000-10,000 in middle-income regions (Table 3). Currently, the high acquisition price of second-generation antipsychotic drugs makes their use in developing regions questionable on efficiency grounds alone,

Table 3 Average cost-effectiveness of interventions at specified levels of coverage (I$ per DALY averted)

		World Bank Region					
		Sub-Saharan Africa	**Latin America & Caribbean**	**Middle East & North Africa**	**Europe & Central Asia**	**South Asia**	**East Asia & Pacific**
Total population (million)		*640*	*502*	*482*	*462*	*1,242*	*1,827*
	Coverage						
Schizophrenia[1]							
Older (neuroleptic) antipsychotic drug	80%	5,202	13,369	6,882	12,260	4,482	8,760
Newer antipsychotic drug	80%	18,497	26,199	19,594	25,693	17,991	22,010
Older antipsychotic drug + psychosocial treatment	80%	3,314	8,993	4,511	10,089	2,887	5,814
Newer antipsychotic drug + psychosocial treatment	80%	11,669	17,352	12,562	20,627	11,354	14,281
Bipolar disorder[1]							
Older mood stabilising drug (lithium)	50%	3,025	8,706	6,122	8,051	3,302	6,103
Newer mood stabilising drug (valproate)	50%	4,829	10,074	6,935	9,620	4,422	7,230
Older mood stabilising drug + psychosocial treatment	50%	2,903	7,785	5,492	7,233	3,136	5,524
Newer mood stabilising drug + psychosocial treatment	50%	4,520	8,988	6,222	8,607	4,147	6,530
Depression							
Episodic treatment: older antidepressant drug (TCA)	50%	1,026	2,219	1,193	2,178	924	1,469
Episodic treatment: newer antidepressant drug (SSRI)	50%	1,396	2,518	1,531	2,526	1,290	1,801
Episodic psychosocial treatment	50%	1,384	2,726	1,499	2,494	1,205	1,787
Episodic psychosocial treatment + older antidrepessant	50%	1,416	2,595	1,487	2,421	1,256	1,738
Episodic psychosocial treatment + newer antidepressant	50%	1,819	2,982	1,866	2,860	1,641	2,125
Maintenance psychosocial treatment + older antidepressant	50%	1,706	2,935	1,721	2,589	1,547	1,968
Maintenance psychosocial treatment + newer antidepressant	50%	2,245	3,460	2,229	3,162	2,072	2,487
Panic disorder							
Anxiolytic drug (benzodiazepine)	50%	1,277	1,853	1,237	1,748	997	1,332
Older antidepressant drug (TCA)	50%	1,013	1,378	984	1,328	842	1,057
Newer antidepressant drug (SSRI; generic)	50%	1,174	1,519	1,135	1,481	1,010	1,219
Psychosocial treatment (CBT)	50%	1,276	1,666	1,145	1,702	970	1,271
Older antidepressant + psychosocial treatment	50%	1,583	1,942	1,440	1,983	1,303	1,584
Newer antidepressant + psychosocial treatment	50%	1,722	2,061	1,570	2,121	1,441	1,720

[1] Results for community-based service model presented here only (hospital-based service model not shown); CBT - cognitive behavioural therapy; DALYs - disability-adjusted life years; SSRI - selective serotonin reuptake inhibitor; TCA - tricyclic antidepressant

although this situation stands to change as these drugs come off patent. By contrast, evidence indicates that the relatively modest additional cost of adjuvant psychosocial treatment reaps significant health gains, thereby making such a combined strategy for schizophrenia and bipolar disorder treatment more cost-effective than pharmacotherapy alone.

For more common mental disorders treated in primary care settings (depressive and anxiety disorders), the single most cost-effective strategy is the scaled-up use of older antidepressants (due to their lower cost but similar efficacy to newer antidepressants). However, as the price margin between older and generic newer antidepressants continues to diminish, generic SSRIs can be expected to be at least as cost-effective and may therefore constitute the treatment of choice in the future. Since depression is so commonly a recurring condition, there are also good grounds for thinking that proactive care management, including long-term maintenance treatment with antidepressant drugs, represents a cost-effective (if more resource-intensive) way of significantly reducing the enormous burden of depression that exists in developing regions.

The considerable difference in cost-effectiveness between common and more severe mental disorders, as well as between low- and middle-income regions of the world, is clearly shown in Figure 1, which illustrates the ratios of cost to effect for a selective package of mental health interventions (one efficient treatment per disorder). Results for this baseline package indicate that, across six low- and middle-income regions, the potential total health gain emanating from such a combination of intervention strategies is in the order of 1,600-2,300 DALYs averted per one million total population, which could be achieved at an estimated cost of close to I$ 3-4 per capita in low-income settings such as Sub-Saharan Africa and South Asia, and up to I$ 10 in middle-income regions (Latin America and the Caribbean; Europe and Central Asia). Two-thirds to three-quarters of the total costs of this package, but only about one third of the health gains are attributable to the more severe psychiatric conditions (schizophrenia and bipolar disorder). Approximately 300-500 healthy years of life can be gained for every investment of one million international dollars. Numerous other specifications are of course possible, including estimation of the costs and effects of a package that makes use of newer psychotropic drugs, or does not include any psychosocial treatment. Such comparisons reveal, for example, that substituting older with newer psychotropic drugs for the baseline package described above is anticipated to increase costs by 100-200% (an extra cost of I$ 4-7 per capita), while health gains would increase by 23-32%.

DISCUSSION

This research report has set out the methods and results for the application of sectoral cost-effectiveness analysis to a range of psychiatric disorders that together represent an appreciable source of global disease burden. The purpose of such an analytical exercise is to locate the relative position of effective interventions within a wider cost-effectiveness framework in the health care sector. Using the criteria of the Commission for Macroeconomics and Health (15), the results of this analysis indicate that a) the most efficient interventions for common mental disorders (depression and panic disorder) can be considered very cost-effective (each DALY averted costs less than one year of average per capita income), and b) community-based interventions for more severe mental disorders using older antipsychotic and mood stabilising drugs meet the criterion for being cost-effective (each DALY averted costs less than three times the average annual income). These findings therefore provide relevant new information to health policy makers regarding the relative value of investing in psychiatric treatment and prevention, and in so doing may help to remove one of many remaining barriers to a more appropriate public health response to the burden of these conditions.

Importantly, however, the existence of such information at the highly aggregate level of WHO or World Bank regions is no guarantee that findings and recommendations will actually change health policy or practice at the national level (where policies are determined and resources actually allocated). Accordingly, there is a clear need to attempt a contextualisation of regional estimates down to this level, since many factors may alter the actual cost-effectiveness of a given intervention across settings, including the underlying epidemiology of disorders; the potential level of effective coverage in the population; the availability, mix and quality of inputs, especially personnel, drugs and consumables; and local prices, especially labour costs. Such a process of contextualisation has now been undertaken in a number of developing and developed countries in different WHO regions (including Estonia, Mexico, Nigeria, Sri Lanka and Spain), involving a step-by-step review and revision of regional model parameter values down to the local level (16). The output is a revised, population-specific set of average and incremental cost-effectiveness ratios for interventions addressing leading contributors to national disease burden.

Determination of the most cost-effective interventions for a particular mental disorder or condition, while informative in its own right, is not the end of the analytical process. Rather, it represents a key input into the broader task of priority-setting. For this task, the purpose is to go beyond efficiency concerns only. Other allocative criteria against which cost-effectiveness arguments need to be considered include the relative severity and the extent of spillover effects among different diseases, the potential for reducing catastrophic household spending on health, and protection of human rights. Thus, priority-setting necessarily implies a degree of trading-off between different objectives of the mental health system, such that the most equitable allocation of resources is highly unlikely to be the most efficient allocation. Within the mental health arena, schizophrenia treatment is an obvious example. While on pure efficiency grounds it could be overlooked in favour of cheaper and more cost-effective care and prevention strategies for more common mental disorders, this disorder is still typically included as a priority condition because of its severity (and consequent vulnerability of affected persons), its often catastrophic effect on the welfare and/or income of families and the socially valuable impact of treatment on individual-level symptoms and functioning. In addition, the relative merits of national or social insurance over private insurance and out-of-pocket expenditures as equitable mechanisms for safeguarding at-risk populations from the adverse financial consequences of mental disorders needs to be taken into account at the national level, as do the respective roles of public, private, voluntary and informal providers (17,18).

APPENDIX

WHO-CHOICE (CHOosing Interventions that are Cost-Effective) forms part of the work of the Department of Health System Financing, Expenditure and Resource Allocation at the World Health Organization in Geneva. The following colleagues have actively contributed to the conceptual and methodological development of WHO-CHOICE and are warmly acknowledged: Dr. Taghreed Adam, Dr. Rob Baltussen, Dr. David Evans, Raymond Hutubessy, Ben Johns, Jeremy Lauer, Dr. Christopher Murray and Dr. Tessa Tan Torres. In applying WHO-CHOICE to neuropsychiatric disorders, the following colleagues in the Department of Mental Health and Substance Abuse are particularly acknowledged for their contribution to data synthesis and interpretation: Dr. Mark van Ommeren (bipolar disorder and panic disorder) and Dr. Shekhar Saxena (schizophrenia and depression). Finally, since much of the foregoing analysis takes as its starting point the most recent Global Burden of Disease estimates for neuropsychiatric disorders, the underlying contribution of Dr. Jose-Luis Ayuso-Mateos and Dr. Bedirhan Ustun to this work is acknowledged. Needless to say, the views expressed rest with the author and are not necessarily those of the organization he serves.

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RESEARCH REPORT

Effectiveness of a psychoeducational intervention for families of patients with schizophrenia: preliminary results of a study funded by the European Commission

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In spite of their proven efficacy, psychoeducational interventions for families of patients with schizophrenia are not being commonly applied in clinical practice. In this report, we present the preliminary results of a one-year follow-up study on the implementation and effectiveness of a psychoeducational family intervention in six European countries. Forty-eight professionals were involved in the study and provided the intervention for one year to 55 families of patients with schizophrenia. During the implementation period, the professionals reported significant organisational difficulties in the provision of the intervention, but acknowledged an improvement of their relationships with users and their families. At follow-up assessment, statistically significant improvements were found in patients' symptoms and social functioning as well as in relatives' burden, coping strategies and social resources.

Key words: Psychoeducational intervention, effectiveness, implementation, staff training, family burden, schizophrenia

Psychoeducational interventions for families of patients with schizophrenia aim to: a) provide the family with information about the patient's disorder and its treatments; b) improve communication patterns within the family; c) enhance family's problem solving skills; d) improve relatives' coping strategies; g) encourage relatives' involvement in social activities outside the family.

Since the 1980s, several studies have demonstrated the efficacy of these interventions. In patients whose families received them, the relapse rate at one year ranged from 6 to 12%, compared with 41 to 53% in routine management care groups. At two years, the relapse rates were 17 to 40% and 66 to 83%, respectively (see 1 for a review). Recent meta-analyses confirmed that family interventions, compared with routine case management, reduce patients' relapse rate fourfold at one year, and twofold in the subsequent year (2,3). In addition, family interventions have been found to improve patients' compliance to antipsychotic drug treatments, and to reduce the overall economic costs of care (4).

In spite of the evidence of their efficacy, psychoeducational family interventions are not commonly applied in clinical practice. In a study carried out in several European countries, the proportion of families who had ever received a psychoeducational intervention ranged from 0 to 15% (5). Studies which have attempted to introduce these interventions into routine clinical settings reported that only 7 to 27% of trained staff put the skills learnt into practice (6), and that the average number of families seen by each therapist in the year after the training ranged from 1.4 to 1.7 (7). One of the factors influencing the dissemination of these interventions in mental health services has been found to be the availability of training courses and supervision for the staff (6-10).

In this report, we present the preliminary data of a study on the implementation and effectiveness of a standard psychoeducational family intervention in six European countries. The study, funded by the European Commission within the framework of the 5th Programme for Research and Technical Development, aimed to explore: a) the possibility to provide psychoeducational intervention for schizophrenia, in routine settings, by staff who had received a structured training and supervision in its use; b) the difficulties and benefits experienced by the staff in the implementation of the intervention; c) the impact of the intervention on patients' clinical status and social functioning, and on relatives' burden, coping strategies and social network.

METHODS

The study was carried out at the Departments of Psychiatry of the Universities of Naples (Italy), Athens (Greece), Lisbon (Portugal), Granada (Spain) and Dresden (Germany), and at the Birmingham and Solihull Mental Health Trust (UK). Each centre selected four mental health services, in which two professionals were trained in the psychoeducational family intervention developed by Falloon et al (11). This is based on the application of cognitive-behavioural techniques to the family context (including the patient), and consists of the following components: a) assessment of individual and family needs; b) informative sessions on the patient's mental disorder and its treatments; c) communication skills training; d) problem solving skills training to deal with daily problems and set individual and family goals.

The professionals attended a basic course (40 hours) in which they were trained in the intervention by means of guidelines, demonstrative audios, scenarios and role plays. These materials, specifically developed in the preliminary phase of the project, were adapted to the national context by researchers of the centres. The professionals were then asked to implement the intervention in their services with relatives of patients with schizophrenia for one year. The only inclusion criterion for relatives was that they lived with the patient in the same house, or had spent at least fifteen hours per week at face to face contact with the patient continuously for the last two months.

During the family work period, the professionals received supervision meetings biweekly for two months and monthly for four months. A further supervision meeting was held one year after the completion of the basic course. In each supervision meeting, implementation and clinical problems occurring in family work were carefully reviewed. At the 1st, 3rd, 5th and 9th supervision meetings (respectively, two weeks, six weeks, three months and one year after the completion of the basic course), the difficulties and benefits experienced by the staff in the implementation of the intervention were recorded by the Family Intervention Schedule (FIS).

At baseline and at 1 year after the start of the intervention, the clinical status and social functioning of recruited patients were assessed by the Brief Psychiatric Rating Scale (BPRS, 12) and the Disability Assessment Schedule (DAS, 13). At the same time, the recruited relatives were asked to fill in the Family Problems Questionnaire (FPQ, 5), the Family Coping Questionnaire (FCQ, 5), and the Social Network Questionnaire (SNQ, 5). Evaluations were performed by researchers of the centers who had received a formal training in the use of the instruments.

The FIS is a 50-item self-administered instrument collecting information on: a) the families to which the intervention has been proposed; b) the clinical and organisational difficulties and benefits experienced by the staff in the provision of the intervention. The FPQ is a 29-item self-administered questionnaire exploring the relative's objective and subjective burden, level of available social and professional support, and attitudes toward the patient. The FCQ is a 34-item self-administered questionnaire, exploring emotion-focused and problem-oriented strategies adopted by the relative to deal with the patient's symptoms and disturbing behaviours. The SNQ is a 15-item self-administered questionnaire measuring the quality and frequency of respondents' social contacts, and the level of available practical and psychological social support. Data on the psychometric properties of the FPQ, FCQ and SNQ are reported elsewhere (5).

The Friedman test was used to assess whether the difficulties and benefits reported by the professionals in the provision of the family intervention showed any significant change from the 1st to the 3rd, 5th and 9th supervision meeting. The ANOVA test was used to compare the patients' clinical status and social functioning, as well as the relatives' burden, coping strategies and social network, at the one year follow-up vs. baseline.

RESULTS

All the 48 professionals who were involved in the project completed the basic training course. 31% of them were psychiatrists, 15% clinical psychologists, 15% social workers, 2% occupational therapists, 29% nurses, 8% other professionals. 42% of them were male; their mean age was 37.3±5.8 years.

The most frequent difficulties in the implementation of the intervention reported by the professionals included work overload, the difficulty to integrate family work with other responsibilities, and the poor allowance of time from the service to run the intervention (Table 1). Although a decrease in the organisational difficulties was observed over time, they were still substantial at the one year assessment.

The difficulties related to the approach per se decreased over time. In particular, problems in the identification of families suitable for the intervention were reported by 42% of professionals at the first supervision meeting compared to 15% at the ninth one, and a lack of confidence with behavioural techniques by 23% of them at the first supervision compared to 6% at the fifth one (Table 1).

At the first supervision meeting, the professionals reported that they had implemented the family intervention at users' home in 30% of the cases. This percentage increased to 42% at the third supervision meeting, but decreased to 35% and 12%, respectively, at the fifth and ninth meeting.

The benefits most frequently reported by the professionals in the implementation of the intervention in their clinical settings concerned their relationships with the patients and their families. Clinical results were acknowledged by 8% of the professionals at the first supervision and by 39% of them at the fifth one. At the last assessment, one year after the completion of the basic course, 61% of the participants reported an increased feeling of confidence in relation to their work compared with their baseline perception (Table 1).

The intervention was proposed to 96 families of patients with schizophrenia. Thirty-one of them (32%) did not accept it. Refusals were mainly due to scepticism regarding the effects of the intervention (27%), patients' poor clinical condition and insight (34%), and family commitments during working hours (27%). Ten families out of 65 (15%)

Table 1 Difficulties and benefits reported by the professionals during the implementation period

	At week 2 (%)	At week 6 (%)	At week 12 (%)	At week 52 (%)
Difficulties				
Availability of suitable families[a]	42	23	22	15
Allowance of time from the service to perform the intervention	53	50	44	40
Integration of family work with caseload or other responsibilities at work	64	54	47	65
Burden of work – too much work, too many demands	65	60	44	43
Unsuitability of the approach to the needs of patients or families	32	4	6	7
Lack of support by the administration or by colleagues	15	11	13	3
Problems with the intervention itself	23	21	9	10
Access to families routinely seen by other professionals[b]	20	35	7	17
Having to work beyond one's usual working hours[b]	42	48	35	14
Lack of confidence with behavioural approaches[b]	23	15	6	6
Lack of confidence with family work	16	16	6	13
Keeping family discussions on track	6	12	10	6
Tailoring the approach to the needs of the family	18	12	10	10
Benefits				
Improvement in staff relationships	22	20	35	35
Improvement in exchange of information on families within the staff	27	28	38	53
Feeling more confident in one's work[b]	14	31	34	61
Clinical results[c]	8	37	39	47
Improvement in the relationships with service users[d]	23	44	57	70
Improvement in the relationships with the service users' families[a]	23	49	56	68

[a]p<0.05; [b]p<0.01; [c]p<0.001; [d]p<0.0001

dropped out over the follow-up period. The most frequent reasons for drop-out were the worsening of patient's clinical conditions (30%), the relatives' lack of interest (30%) and the occurrence of physical problems in relatives (20%).

A total of 55 patients (65% male; mean age 30.3±8.7 years; 91% single; 18% employed) received the intervention for one year. Their mean age at onset of illness was 21.8±6.3 years; their mean number of previous voluntary and involuntary admissions was 1.9±2.5 and 0.7±1.3, respectively. The relatives who received the intervention were 118 (46% male; mean age 51.7±16.2 years; 53% employed; 71% parents, 2% spouses, 18% brothers/sisters; 4% sons and 5% other relatives; mean number of years spent with the patient 27.3±7.9).

At the one year follow-up assessment, a significant improvement of patients' clinical status and social functioning, as well as a significant reduction of relatives' objective and subjective burden, was observed (Table 2). Moreover, there was a significant reduction in the use of coercion and resignation as coping strategies, and an increase of relatives' positive communication with the patient and social interests and contacts. Finally, relatives perceived an increase of support from professionals at follow-up vs. baseline (Table 2).

DISCUSSION

To our knowledge, this is the first study on the implementation and effectiveness of a standard psychoeducational intervention for families of patients with schizophrenia which presents simultaneously the following characteristics: a) having been carried out in several European countries; b) having monitored longitudinally the difficulties and benefits experienced by the professionals in the use of the intervention in their routine practice; c) having explored the effects of the intervention on patients' symptoms and social functioning and on relatives' burden, coping strategies and social network. In some of the countries, the study is currently ongoing on a larger number of professionals and using randomized waiting lists of eligible families as controls.

The organisational difficulties encountered in the implementation of the intervention were substantial throughout the follow-up period. In addition, a poor level of collaboration by colleagues was reported by the professionals. These findings are probably related to the fact that, in most European clinical settings, the management of schizophrenia still focuses exclusively on the affected individual. The introduction of a new treatment which considers the family as an essential resource for recovery in a person with schizophrenia is likely to elicit scepticism or resistance among the professionals. Strategies need to be devised in order to deal with barriers limiting the implementation of family interventions in clinical practice and to facilitate the collaboration of the staff. These should include logistic changes in the mental health services organisation, such as flexibility of working hours and career incentives for professionals involved in the implementation process, as well as management of staff dynamics through work psychology techniques.

Most of the benefits reported by the professionals during the implementation phase increased over time. The clinical benefits reported by the professionals are in line with the statistically significant improvement of patients' clinical condition and social functioning found at follow-

Table 2 Patients' clinical status and social functioning and relatives' burden, coping strategies, social network and perceived help at baseline vs. 1-year follow up

	Baseline (mean ± SD)	Follow-up (mean ± SD)	p<
Patients			
BPRS positive symptoms	2.2 ± 1.0	1.7 ± 0.9	0.0001
BPRS negative symptoms	2.3 ± 1.1	1.9 ± 1.0	0.01
BPRS depression/anxiety symptoms	2.6 ± 1.1	2.1 ± 0.9	0.001
BPRS manic/hostility symptoms	1.9 ± 0.9	1.6 ± 0.7	0.01
DAS global score	2.6 ± 1.1	2.1 ± 1.1	0.0001
Relatives			
Burden			
Objective dimension	1.7 ± 0.7	1.4 ± 0.4	0.0001
Subjective dimension	2.1 ± 0.5	1.8 ± 0.5	0.0001
Coping strategies			
Coercion	1.9 ± 0.7	1.6 ± 0.6	0.01
Patient's social involvement	3.1 ± 0.7	3.1 ± 0.8	N.S.
Collusion	2.3 ± 0.8	2.0 ± 0.7	0.01
Positive communication	3.1 ± 0.5	3.3 ± 0.5	0.0001
Avoidance	1.3 ± 0.7	1.1 ± 0.3	0.01
Information	2.7 ± 0.9	2.5 ± 0.9	N.S.
Maintenance of social interests	2.5 ± 0.5	2.8 ± 0.6	0.0001
Talking with friends	2.2 ± 1.1	2.2 ± 0.9	N.S.
Resignation	2.3 ± 0.8	1.8 ± 0.7	0.0001
Spiritual help	2.8 ± 1.3	2.5 ± 1.2	0.01
Use of alcohol	1.2 ± 0.6	1.1 ± 0.5	N.S.
Social network			
Emotional support	2.9 ± 0.7	3.0 ± 0.7	N.S.
Practical support	3.4 ± 1.1	3.2 ± 0.8	0.01
Social contact	2.1 ± 0.5	2.4 ± 0.6	0.0001
Help received			
Professional help	3.1 ± 0.6	3.4 ± 0.4	0.0001
Understanding by friends	2.6 ± 0.8	2.8 ± 0.7	N.S.

BPRS - Brief Psychiatric Rating Scale; DAS - Disability Assessment Schedule

up assessment. The increase of the professionals' confidence in their work is probably related to the provision of regular supervision meetings, in which they have been offered the opportunity to compare their experiences and devise common strategies to deal with problems occurring in their family work.

The provision of the psychoeducational intervention was associated with a statistically significant improvement in patients' symptoms and social functioning as well as in family burden and coping strategies. These results, which are consistent with data reported in the literature (3,8), could be interpreted in the light of the stress-vulnerability model of schizophrenia (14). This model postulates that psychotic episodes result from the interaction between the individual vulnerability of the patient and the level of environmental stress the patient is exposed to. According to this model, the one-year improvement of patients' clinical conditions and social functioning may be related to changes in relatives' strategies to deal with daily problematic situations, as a result of the psychoeducational intervention (5).

The results of this study support the idea that it is possible to introduce psychoeducational interventions in routine settings. Further investigations are needed in order to identify obstacles at organisational, socio-cultural, clinical and methodological levels which may limit the likelihood that patients with schizophrenia and their families receive these interventions in routine conditions.

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RESEARCH REPORT

Psychological effects of the Nairobi US embassy bomb blast on pregnant women and their children

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A descriptive study was carried out in pregnant women who were affected by the 1998 bomb blast in Nairobi, Kenya, and their babies who were in utero at the time of the blast. The psychological effects of the event on the exposed women were severe. After three years, the average score on the Impact of Event Scale - Revised was still higher than 29 for the three subscales combined, suggesting that most of the study group was still suffering from clinical post-traumatic stress disorder (PTSD). The scores on all Childhood Personality Scale (CPS) subscales were significantly higher in children of the study group than in controls. The mothers' PTSD symptom levels at one month after the blast correlated with the children's CPS profiles.

Key words: Pregnant women, psychological stress, children's behavioural abnormalities

There is evidence for an association between anxiety and psychological stress in pregnant women and childhood maladaptation in their offsprings who were in utero at the time of the anxiety/stress (1-3). Moreover, delinquent populations have been shown to have a higher prevalence rate of histories of pre-natal problems and stress than non-delinquent populations (4). We hypothesized that Kenyan pregnant mothers who suffer from acute stress disorder (ASD) and post-traumatic stress disorder (PTSD) are more likely to give birth to children (in utero at the time of the ASD/PTSD) with maladaptive behaviour and psychological problems.

We carried out a descriptive study in pregnant women who were affected by the bomb blast occurring in Nairobi, Kenya on August 7, 1998 and their babies who were in utero at the time of the blast. This was a disastrous event in which 213 people died and 5,000 sustained injuries taking them to hospitals around the city (5).

The time and location of the bomb blast, affecting a cosmopolitan population, and the ample number of pregnant mothers involved, makes the study population a representative sample.

METHODS

Thirty-seven expectant mothers who survived the bomb blast were enlisted for the study after obtaining their informed consent. Forty-one women with a similar socioeconomic background, who had no history of trauma during pregnancy and had a child within the same age range (23-38 months) as the study group, were randomly selected as the control sample, after providing informed consent.

In addition to the medical records and a socio-demographic questionnaire, the Impact of Event Scale – Revised (IES-R) (6) and the Childhood Personality Scale (CPS) (7) were administered. The latter scale consists of 48 items covering a broad category of children's behaviours, half of which are viewed as socially desirable (normal) and the other half as abnormal. For all items, high scores indicate a child's deviation from normal. The items are further clustered into subscales: socialization, depression, hyperactivity, creativity, attention span.

During focus group and peer counselling sessions, mothers were given the opportunity to freely express their experiences and feelings in relation to the impact of the blast on their lives. Comments and observations shared were recorded.

The data were analysed using the statistical package for social scientists (SPSS version 10.0). Student's t-test and chi-square were used, as indicated, to compare variables between the two samples, and Pearson's correlation coefficient was used to test correlations between variables. Due to the small sample size, confidence interval level was set at 90%.

Clearance for the study was obtained from the Kenyan Government.

RESULTS

All the mothers were of African origin; the majority (92%) were Kenyan. The traumatised mothers' ages ranged between 24 and 41 years, with a mean of 32 years;

Table 1 Scores on the subscales of the Impact of Event Scale – Revised in traumatized women (n=37) one month and three years after the bombing

	One month after		Three years after		t	p
	Mean ± SD	*Range*	*Mean ± SD*	*Range*		
Re-experiencing	19.5 ± 6.0	3-28	16.1 ± 7.0	0-28	2.36	0.02
Hyperarousal	26.9 ± 8.9	7-40	21.4 ± 10.9	0-39	2.54	0.01
Avoidance	51.4 ± 22.0	7-91	44.1 ± 25.0	2-92	1.93	0.06

Table 2. Scores on the subscales of the Childhood Personality Scale in children of traumatized women and controls

	Study group (n=37)	Control group (n=41)	t	p
Normal behaviour				
mean±SD (range)	78.6±33.3	29.5±13.7	7.51	0.001
(maximum score = 144)	(7-124)	(5-62)		
Behaviourally disturbed				
mean±SD (range)	71.9±16.7	57.0±21.6	2.88	0.007
(maximum score = 144)	(37-97)	(10-94)		
Depression				
mean±SD (range)	30.9±11.9	23.4±11.2	2.61	0.01
(maximum score = 78)	(4-49)	(1-45)		
Socialization				
mean±SD (range)	54.8±23.9	18.8±23.9	7.76	0.001
(maximum score = 102)	(0-90)	(3-45)		
Hyperactivity				
mean±SD (range)	37.6±8.8	30.0±11.6	2.75	0.009
(maximum score = 60)	(16-54)	(9-59)		
Creativity				
mean±SD (range)	13.2±7.5	5.6±4.4	4.88	0.001
(maximum score = 24)	(0-24)	(0-18)		
Attention span				
mean±SD (range)	14.2±4.9	8.6±3.8	5.46	0.001
(maximum score = 24)	(0-23)	(1-15)		

the non-traumatised mothers' age range and mean were 21-39 and 28.7 years respectively (p=0.083). The two samples did not differ with respect to educational level (p=0.413) or number of children (p=0.891). Traumatized women were more likely to be formally employed (78.4% vs. 26.8%, p=0.002).

Of the traumatized women, 86.5% were within 100 metres from the epicentre of the bomb blast and the rest within 200 to 400 metres. Due to the effects of exposure to the bomb, 89.2% of the mothers were not able to work (the duration of absence from work ranged from one month to three years). According to their perception, 54.1% of the traumatized women lost consciousness, whereas 32.4% did not lose consciousness and the remaining could not remember. Seven mothers lost close relatives in the disaster, including one who lost her spouse; the other 30 lost at least one close friend.

Thirty-two traumatized women received counselling (three immediately after the bombing; four during the first month and twenty-four after the first month). Counselling was perceived as very helpful by 55% of the women, and as helpful by a further 32%.

Table 1 shows the mean scores on the IES-R dimensions of re-experiencing, hyperarousal and avoidance at one month and three years after the bomb blast. A total average score of more than 29 for the three subscales combined, which is indicative of clinical PTSD (8), was found at both times.

The age of children in the study group at the time of the interview ranged from 23 to 38 months, with a mean of 34, while that in the control group ranged from 29 to 40 months, with a mean of 35. The study group consisted of 54.1% males and 45.9% females, while the control had 41.5% males and 58.5% females. The two groups did not

Table 3. Correlations between traumatized women's scores on the Impact of Event Scale – Revised and their children's scores on the Childhood Personality Scale (p values are shown)

	Normal	Disturbed	Depression	Socialization	Hyperactivity	Creativity	Attention span
Exposure	.694	.032*	.090*	.907	.127	.573	.382
Safety index	.035*	.335	.036*	.011*	.127	.504	.428
Initial response	.544	.450	.836	.658	.075*	.651	.184
Re-experiencing 1	.027*	.702	.495	.018*	.746	.116	.249
Re-experiencing 2	.368	.417	.305	.395	.975	.179	.912
Hyperarousal 1	.012*	.854	.646	.014*	.322	.049*	.061*
Hyperarousal 2	.347	.241	.234	.387	.665	.210	.590
Avoidance 1	.074*	.727	.642	.048*	.233	.466	.258
Avoidance 2	.543	.154	.222	.586	.431	.223	.968

1 - One month after the blast
2 - Three years after the blast
* p<0.01

differ significantly with respect to place of birth, mode of delivery and Apgar score, but were statistically different in gestation period at birth (9 months: 70.3% in the study group, 90.2% in the control group; eight months: 5.4% vs. 7.3%; 7 months: 24.3% vs. 2.4%, p=0.0001). In the children of the study group, the gestation age at the time of the blast was as follows: first trimester 16.2%, second trimester 37.8%, third trimester 45.9%.

The CPS profile for both groups is summarised in Table 2. The mean score was significantly higher in the study group on all subscales.

Table 3 summarises the correlations between the mothers' IES-R scores and the children's scores on the CPS subscales. Overall, it can be seen that the mothers' experiences at the time of the bomb blast and one month after the incident had some significant correlations with children's behaviour, whereas mothers' emotional state three years after had none.

DISCUSSION

This was a descriptive study carried out in a relatively small sample. To our knowledge, there are no other studies conducted under similar circumstances that can be used for comparison.

The social and demographic characteristics of mothers in the study and control groups reflect those of the general Kenyan population. The two groups were similar on all socio-demographic characteristics, except occupation. The differences in occupation could be explained by the proximity of the business district to the epicentre of the bomb blast.

The psychological effects of the disastrous event on exposed women, as assessed by the IES-R, were severe. There were significant improvements after three years in hyperarousal and re-experiencing subscales, but the average score on IES-R was still higher than 29 for the three subscales combined, suggesting that most of the study group was still suffering from clinical PTSD, although they reported they had found counselling helpful.

The scores on all CPS subscales were significantly higher in children of the study group than in controls. These findings confirm the presenting complaints by mothers of the study group as to why these children seemed to be different from other children, an observation for which the mother had no explanation. The mothers' PTSD symptom levels at one month after the blast correlated with the children's behavioural abnormalities. However, PTSD scores three years after the blast had no correlation with the children's CPS profiles.

Despite the perceived benefits of interventions put in place after the bomb blast, limited effects on the intensity of PTSD were demonstrated in exposed mothers three years after the event, which emphasizes the need to evaluate psychological interventions for trauma victims with a view to making them more effective and culturally appropriate.

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Working life and mental health – A challenge to psychiatry?

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According to the World Health Organization, "mental health problems and stress-related disorders are the biggest overall cause of early death in Europe". Some of the root causes of this morbidity and mortality are related to living and working conditions that are accessible to preventive and therapeutic interventions, individual as well as collective ones. A political mandate for such interventions is now developing. Members of the WPA Section on Occupational Psychiatry have contributed to this development and we now invite the readers to join the Section in its endeavours.

Key words: Occupational mental health, work-related stress, disease prevention, health promotion, systems approach

According to Hippocrates, "A physician visiting common people should not immediately feel the patient's pulse, disregarding his conditions of life. And he should not discuss what is to be done standing up … but sit down for a while … and cheerfully ask the patient what is ailing him, how it came about, and how many days it has already been bothering him … Also if he has had evacuation and what he eats". To this quote, Ramazzini (1) added: "He should also enquire which craft the patient pursues".

The latter, ground-breaking, statement was published more than three centuries ago. Since then, there is no doubt whatsoever that a wide variety of living and working conditions are powerful determinants of health, for better or for worse. The relationship works both ways. Working conditions affect health, but health more often than not also affects a person's productivity and earning capacity, as well as his or her social and family relationships. Needless to say, this holds true for all aspects of health, both physical and mental.

However, before issuing any "call for action", by psychiatrists or others, we need to consider whether there is, indeed, a problem – whether work-related or other stress and depression are widespread, have serious consequences, are becoming more prevalent and severe – and whether this is accessible to interventions (2). The available evidence indicates that the answer to all these questions is yes. According to the World Health Organization (WHO) (3), "mental health problems and stress-related disorders are the biggest overall cause of early death in Europe". But they are not only a matter of premature mortality. According to the same report, mental ill health and disorders are among the major health concerns in Europe today. In particular, depression, suicide and other stress-related conditions, together with destructive lifestyles and psychosomatic diseases, cause immense suffering to people and their families, as well as placing "a great economic cost on society".

How great is this "economic cost"? According to a report prepared during the Finnish European Union (EU) presidency and quoted by the International Labour Office (ILO) (4), the cost of mental health problems in the 15 member states of the European Union in the year 2000 was estimated to be on average 3-4% of gross domestic product (GDP). If we approximate the percentage to, say, 3.5% and use the EU15 GDP (19,301 billion euro in 2003) as a basis for our calculation, the cost would amount to 325 billion euro.

THE ROOT CAUSES

Do we know the root causes of these outcomes, and, if so, are they accessible to change?

According to the WHO (3), mental health problems can be caused by a combination of circumstances: biological, social and psychological factors and stressful events. They are usually associated with difficulties either in our personal lives or in the wider environment in which we live. In its analysis of such circumstances, the British govern-

Table 1 Factors affecting health (according to the British government, 5)

Fixed	Social and economic	Environmental	Lifestyle	Access to services
Genes	Poverty	Air quality	Diet	Education
Sex	Employment	Housing	Physical activity	National health system
Ageing	Social exclusion	Water quality	Smoking	Social services
		Social environment	Alcohol	Transport
			Sexual behaviour	Leisure
			Drugs	

ment (5) calls attention to five different types and exemplifies each of them (Table 1). The "fixed" factors in the first column are difficult to adjust, whereas successful interventions are feasible against those listed in the other four columns: social and economic; environmental; lifestyle; and access to services.

The causal significance of the latter four types of factors has been analysed by Wilkinson and Marmot (6). The authors conclude that the "solid facts" are that: a) social and economic circumstances affect people's health strongly throughout life; b) work-related stress increases the risk of disease as do unemployment and job insecurity; c) social exclusion creates health risks, while social support promotes health and well-being; d) individuals may turn to alcohol, drugs and tobacco and suffer as a result of their use, but this process is also influenced by the wider social setting, which is often beyond individual control.

THE SCIENCE-POLICY-IMPLEMENTATION GAPS

The awareness that it is possible to intervene on the above four types of factors has existed for quite a while, with a very considerable and growing body of circumstantial evidence to support it. In spite of this, there is still a broad science-policy gap, and an even broader one between policy and implementation. This is why there has, so far, been "great cry and little wool". As I see it, the WPA, its member bodies, and you, the reader, may wish to feel challenged to contribute to correcting this state of affairs.

Back in 1970, the WHO and the University of Uppsala co-sponsored a high-level international, interdisciplinary symposium at the Karolinska Institute in Stockholm on the broad theme of "Society, Stress and Disease" (7). This was followed up by four subsequent symposia with a more specific focus on major phases of the human life cycle, from the cradle to the grave (8-11), summarizing a host of scientific evidence for subsequent policy formulation and implementation. In 1973, the WHO designated our department at the Karolinska Institute as its first collaborating centre on psychosocial factors and health. In 1974, the 27th World Health Assembly was devoted to an in-depth discussion of this field. In 1979, the US Surgeon General's ground-breaking report on disease prevention and health promotion included a chapter on psychosocial factors in preventive medicine (12). Following a series of agency specific and joint consultations and workshops, the Joint International Labour Office (ILO)/WHO Committee on Occupational Health issued its report on "Psychosocial Factors at Work: Recognition and Control", which was subsequently endorsed by the ILO Governing Body and the WHO Executive Board and published (13) as a set of joint recommendations to the social partners worldwide. Soon after, the WHO compiled and published its state-of-the-art document on "Psychosocial Factors at Work and their Relation to Health" (14), which was updated, five years later, in an ambitious ILO (15) report, "Preventing Stress at Work".

WIDESPREAD EXPOSURES, MORBIDITY AND MORTALITY

During the 1990s, the European Foundation for the Improvement of Living and Working Conditions conducted and published three major surveys of working conditions and workers' health in the EU Member States.

According to the most recent one (16), more than half of the 160 million workers in EU15 report working at a very high speed (56%), and to tight deadlines (60%). More than one third have no influence on task order. 40% report having monotonous tasks. Such work-related "stressors" are likely to have contributed to the present spectrum of ill health: 15% of the workforce complain of headache, 23% of neck and shoulder pains, 23% of fatigue, 28% of "stress", and 33% of backache (16). And to many other diseases, even to life-threatening ones.

Sustained work-related stress is an important determinant of depressive disorders. Such disorders are the fourth leading cause of the global disease burden. They are expected to rank second by 2020, behind ischaemic heart disease, but ahead of all other diseases (17).

It is further likely that sustained work-related stress is an important determinant of the metabolic syndrome (18,19). This syndrome comprises a combination of: abdominal accumulation of adipose tissue; a decrease in cellular sensitivity to insulin; dyslipidemia (increase in low density lipoprotein cholesterol and triglycerides, and decrease in high density lipoprotein cholesterol); and hypertension, probably contributing to ischaemic heart disease and diabetes type 2 morbidity.

The most important pathogenic pathways from psycho-socio-economic determinants to ill health in Europe usually comprise (2): a) psycho-socio-economically induced physiological over-arousal; b) psycho-socio-economically induced pathogenic behaviours; c) pathogenic interpretation of environmental characteristics; d) pathogenic interpretation of proprioceptive signals (signals originating within the tissues of the body); e) pathogenic "patient's delay"; f) psychosocial "avitaminosis".

COMPLEMENTARY EUROPEAN INITIATIVES

Over a decade ago, in 1993, the Belgian EU Presidency, the European Commission and the European Foundation jointly organized a major Conference on "Stress at Work – A Call for Action". The conference highlighted the increasing impact of stress on the quality of working life, employees' health and company performance. Special attention was devoted to stress monitoring and prevention at company, national and European level. Instruments and policies for better stress prevention were presented and discussed. Finally, a round table on "Future Perspectives on Stress at Work in the European Community" brought together representatives from national governments, the European Commission, the European Social Partners and the Foundation (20). Based on these deliberations, the European Commission created an ad-hoc group to the Advisory Committee on Health and Safety on "Stress at Work". The ad-hoc group proposed and the Advisory Committee endorsed (21) the preparation of a "Guidance" in this field.

This Guidance (22) emphasizes that, according to the EU Framework Directive, employers have a "duty to ensure the safety and health of workers in every aspect related to the work". The Directive's principles of prevention include "avoiding risks", "combating the risks at source", and "adapting the work to the individual". In addition, the Directive indicates the employers' duty to develop "a coherent overall prevention policy". The Guidance provides a solid and detailed basis for such endeavours.

Based on surveillance at individual workplaces and monitoring at national and regional levels, work-related stress should be prevented or counteracted by job redesign (e.g. by empowering the employees, and avoiding both over- and underload), by improving social support and by providing reasonable reward for the effort invested by workers, as integral parts of the overall management system, also for small and medium sized enterprises (SMEs). And, of course, by adjusting occupational physical settings to the workers' abilities, needs and reasonable expectations – all in line with the requirements of the EU Framework Directive and Article 152 of the Treaty of Amsterdam. Supporting actions include not only research but also adjustments of curricula in business schools, in schools of technology, medicine, and behavioural and social sciences, and in the training and retraining of labour inspectors, occupational health officers, managers and supervisors, in line with such goals.

This overall approach was further endorsed in the Swedish EU Presidency conclusions (23), according to which employment not only involves focusing on more jobs, but also on better jobs. Increased efforts should be made to promote a good working environment for all, including equal opportunities for the disabled, gender equality, good and flexible work organisation permitting better reconciliation of working and personal life, lifelong learning, health and safety at work, employee involvement and diversity in working life. An obvious interlocking question is – *how*? The answer to this question is considered in three recent European documents (24): the European Commission's "Guidance on Work-Related Stress" (22) described above; the European Standard on Ergonomic Principles Related to Mental Work Load (25); and the European Commission's Green Paper on "Promoting a European Framework for Corporate Social Responsibility" (26).

A COMPARISON BETWEEN THE THREE APPROACHES

The stress-stressor-strain concepts

The European Standard defines "mental stress" as a stimulus – generally in line with the corresponding definition in physics, as "a force that tends to strain or deform a body". The Guidance has chosen the current psycho-socio-biological stress concept originally introduced by Selye (27), comprising the common denominators in an organism's adaptational reaction pattern to a variety of influences and demands. According to the European Standard, stress (= the stimulus) induces "mental strain" (= the reaction). The non-specific aspects of the latter is what the Guidance refers to as "stress". The European Standard's "stress" concept equals the Guidance's concept of "stressor". It is, of course, important to keep in mind these fundamental differences between the two sets of definitions, to avoid confusion.

Negative, positive, or neutral connotations

The European Standard emphasizes that its stress concept is regarded as neither intrinsically negative or positive. Depending on the context it can be both or neither. Similarly, the Guidance indicates that stress can be positive ("spice of life") or negative ("kiss of death"), depending on the context and on interindividual variation.

Unfavourable long-term effects?

The European Standard excludes consideration of possible negative long-term effects because of "the yet inconclusive results of research". The Guidance, prepared almost a decade later, takes the opposite view and presents evidence of a wide variety of negative (health) effects of long-term stressor exposures. The latter evaluation is also in line with the WHO (3) formulation that "mental health problems and stress-related disorders are the biggest overall cause of early death in Europe".

Different paradigms

The three approaches are based on different but related paradigms. The European Commission's Guidance has its roots in workers' protection, stress medicine and psychology, and in an ecological or systems approach. The European Standard is based on ergonomics – an applied science of equipment and work process design intended to maximize productivity by reducing operator fatigue and discomfort. And the Green Paper has as its basic core a consideration for ethics and human rights (24).

The Guidance was prepared with the awareness that "one size does not fit all". It is a hors-d'oeuvre, a smorgasbord, from which all stakeholders are invited to choose the combination of interventions considered to be optimal in their specific setting, for subsequent evaluation. It is chimed with the European Framework Directive and aims at preventing work-related ill health and promoting well-being and productivity.

The Standard is more precise in its indications of what to include and what to promote and how. It refers to all kinds of human work activity with the explicit aim to "fit the work system to the user". It never says so but leaves the reader with the impression that productivity (rather than health and well-being) should be considered as the primary outcome.

A EUROPEAN VOLUNTARY AGREEMENT

The Summary of the Commission's Guidance has been a basis for recent negotiations between the European Social Partners. On May 27, 2004, the Partners reached a European Framework Agreement on Work-related Stress (28), which has been formally ratified on October 8, 2004 by the constituent bodies of the four European social partner organisations. Its aim is to a) increase the awareness and understanding by employers, workers and their representatives of work-related stress; b) draw their attention to signs that could indicate problems of work-related stress.

According to it, identifying whether there is a problem of work-related stress can involve an analysis of factors such as work organisation and processes (working time arrangements, degree of autonomy, match between worker's skills and job requirements, workload, etc.), working conditions and environment (exposure to abusive behaviour, noise, heat, dangerous substances, etc.), communication (uncertainty about what is expected at work, employment prospects, or forthcoming change, etc.) and subjective factors (emotional and social pressures, feeling unable to cope, perceived lack of support, etc.).

Anti-stress measures could include, for example: a) management and communication measures such as clarifying the company's objectives and the role of individual workers, ensuring adequate management support for individuals and teams, matching responsibility and control over work, improving work organisation and processes, working conditions and environment; b) training managers and workers to raise awareness and understanding of stress, its possible causes and how to deal with it, and/or to adapt to change; c) provision of information to and consultation with workers and/or their representatives in accordance with EU and national legislation, collective agreements and practices.

Now ratified, the agreement is to be implemented by the national member organisations according to the procedures specific to management and labour at national level within a 3-year timescale.

CORPORATE SOCIAL RESPONSIBILITY?

The corporate social responsibility (CSR) initiative constitutes a broad approach, comprising employee health, well-being and productivity, as well as economic and ecological sustainable development.

At its final meeting on June 29, 2004, high level representatives of business, trade unions and civil society presented the final report of the European Multi-Stakeholder Forum (29) on CSR to the Enterprise and Employment Commissioners of the European Commission. The report, containing recommendations on raising awareness, building capacity and creating an enabling environment, represents the final outcome of many months of intense discussions. The starting point for the Forum's discussion was the definition of CSR provided by the European Commission (26): "CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis".

Through CSR, businesses contribute to sustainable development. The baseline understanding is that: a) CSR is the voluntary integration of environmental and social considerations into business operations, over and above legal requirements and contractual obligations; b) the commitment of management in driving CSR forward is essential; c) CSR is about the core business activities of a company and, while companies are there to make profits, an approach which integrates environmental and social considerations and is based on dialogue with stakeholders is likely to contribute to the long-term sustainability of business in society; d) CSR is one means amongst many for achieving economic, social and environmental progress, and for integrating these concerns into business practice; e) the dialogue with relevant stakeholders adds value to the development of companies' CSR practices and tools; as employees are an integral part of a company, it is important to pay particular attention to the role of employees and their representatives and dialogue with them; f) CSR is complementary to other approaches of ensuring high environmental and social performance: there are limits to CSR, and it alone cannot be expected to ensure environmental and social improvement and should not be used to shift public responsibilities to companies; g) CSR is an ongoing learning process for companies and stakeholders; the development of tools and practices is work in progress; companies need to consider their approach carefully and choose tools which suit their needs and respond well to stakeholders' expectations; companies need to refine and develop their approach over time, responding to changing circumstances and expectations; scope for flexibility, innovation and refinement are important for successful CSR; h) when operating in developing countries and/or in situations of weak governance, companies need to take into account the different context and challenges, including poverty, conflicts, environment and health issues.

Although attempts have been made to instrumentalize the CSR concept by providing quantitative and qualitative measures of targets, interventions and outcomes (30), there is a considerable risk of some stakeholders paying lip service to CSR without taking more than token action.

Even so, all the above three initiatives constitute important bases for tripartite collaboration for the promotion of high productivity, high occupational and public health and high quality of life. There is an urgent need to disseminate available knowledge, implement it in disease prevention and health promotion policies, and evaluate the outcomes (31).

WOULD YOU LIKE TO JOIN?

The WPA Section on Occupational Psychiatry has been active since 1983. Its officers and other members have contributed to many of the developments in this field, as reviewed above. According to its statutes, the aim of the Section is to "create new, and exchange and apply existing knowledge concerning the influence, for good or bad, of psychosocial as well as physical work conditions and environments on mental and psychosomatic health".

In line with this aim, the Section Committee cordially invites readers of World Psychiatry and other colleagues to apply for membership and contribute to future developments in this fascinating and dynamic field. If you are interested, please contact: Prof. L. Levi, lennart.levi@ipm.ki.se or lennart.levi@eurostress.se; Prof. T. Shimomitsu, tshimo@tokyo-med.ac.jp; Prof. M. Freire-Garabal, fffregar@usc.es.

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The WPA International Congress "Treatments in Psychiatry: An Update"

AHMED OKASHA
President, World Psychiatric Association

This is a brief note to describe an unprecedented event in the history of WPA. The Association had one of its most successful congresses, if not the best, since its birth fifty years ago, in Florence from 10 to 13 November. The admixture of Science and Art was a marker of the congress. The quality of the scientific presentations reflected the state of the art in the treatment of psychiatric disorders.

The congress has been attended by 6,847 delegates (5,009 from high income countries; 658 from upper middle income countries; 505 from lower middle income countries; 226 from low income countries; 269 trainees or students; 180 registered accompanying persons). It has been the most attended psychiatric congress taking place in Europe in the year 2004, and the second most attended in the world after the American Psychiatric Association annual meeting.

The presentations have been 1,523, including 14 update lectures; 2 special lectures; 14 advanced courses; 144 presentations in the 36 interactive symposia; 17 in the two special symposia; 39 in the 9 forums; 226 in the 55 section symposia; 49 in the 11 zonal symposia; 219 in the 53 workshops; 100 in the 15 new research sessions; 642 in the three poster sessions; 57 in the 19 sponsored events.

The surplus transferred to the WPA central funds has been of US$ 504,412.53.

The complete abstract book of the Congress is available on the WPA website (www.wpanet.org**).**

We are grateful to Mario Maj and his collaborators for the extraordinary efforts and the superb organization.

I promise to give you further news about our future congresses, including the regional congress we will have in Athens next March, and especially the 13th World Congress of Psychiatry which will take place in Cairo from 10 to 15 September.

I am proud of the continuous progress of our scientific meetings worldwide, fulfilling the goals of the WPA.

The WPA welcomes three new Member Societies and establishes its first Permanent Secretariat

JOHN COX
WPA Secretary General

The WPA, as a global association of associations, gains its strength not only from the good standing and probity of its leaders (e.g., Zonal Representatives, Chairs of Sections, Executive Committee, etc.), but particularly from the vigour of its 130 Member Societies. Admitting a new Member Society to the WPA is therefore a particularly strategic event. This is why the General Assembly formally admits a Society following detailed consideration by the Executive Committee and the Board.

In the past 12 months we have welcomed three new Member Societies: the Sri Lankan College of Psychiatry, the Palestinian Psychiatric Association and the Algerian Psychiatric Association. Each of these societies faces particular challenges with regard to the political environment in which they work, and the advancement of science and good practice within parts of the world where mental disorder is common and psychiatrists are few. The Sri Lankan College is boosted by its close links with its members working in the United Kingdom and elsewhere. The leaders of the Palestinian Psychiatric Association have already been active in the search for reconciliation, working together with Israeli psychiatrists in a WPA Task Force. It is much to be hoped that the new member society from Algeria will encourage other societies in North and Western Africa to join the WPA. I have recently been in correspondence with psychiatrists in some West African countries which presently have no links with WPA and am working with the Zonal Representative (Prof. Olawatura) attempting to facilitate these key forms of professional association. The Secretariat has also received applications to join WPA from the Moldova Psychiatric Association and the Irish College of Psychiatrists.

It is a cardinal value of WPA that Member Societies influence and assist each other. The democratic structures and weighted voting mechanisms ensure that the work of the WPA cannot be dominated by the large Member Societies but that the institutional resources of these societies can facilitate establishing educational and scientific links with societies that are less well resourced. This exchange of ideas and personnel is therefore a key two-way process.

Those societies in countries with a substantial proportion of members working abroad (e.g., Indian and Pakistan Psychiatric Associations, American Psychiatric Association and the Royal College of Psychiatrists in the UK) have a particular contribution to make by sustaining this two-way exchange of people, science and culture. It is much to be hoped that the links for example between the French speaking countries in Africa and elsewhere with Europe could be deliberately fostered. The larger societies with more resources are, I would suggest, recognising increasingly that they can be strengthened further by working for, and within, the WPA Sections, Operational Committees and scientific meetings. In so doing, they will enhance global psychiatry and international outreach that they cherish.

It is a strength of WPA that, through the work of its Review Committee and the General Assembly, a Member Society that fails to live up to the Madrid Declaration can, following due process, be admonished, suspended or even expelled. Since being in office I have been impressed by the attention to detail and due process of the Review Committee's work in this regard, and await the recommendations that will be brought to the General Assembly with regard to what I hope will be a constructive outcome to the alleged political abuse of psychiatry in China. Psychiatrists in China and elsewhere in the world, including my own country, are subjected to political influence, which can threaten the development of optimum mental health legislation, and make more difficult ensuring the human rights of psychiatric patients.

Permanent Secretariat

On September 6th, a memorandum of understanding (contract) was signed by the President of WPA and the Director of the University Hospitals of Geneva, which will establish by early 2005 the first Permanent Secretariat of the WPA since its foundation in 1950. Hitherto, the Secretariat has moved every six years with the Secretary General, which has led to problems of institutional instability and lack of continuity of ideas and personnel. The establishment of a Permanent Secretariat, which has been a cherished ambition for the WPA for at least the last ten years, is therefore a very significant decision. The Executive Committee made this decision unanimously and after wide consultation and visits to each of the six proposed sites (two in the United States, two in the UK, one each from Austria and Switzerland). The WPA should be proud that six innovative and prestigious centres wished to make a sustained competitive bid. The bids were each assessed objectively against the criteria previously agreed by the General Assembly. The transfer and interim arrangements have been reviewed by the Board at its meeting in Florence, and the Geneva authorities are expected to conclude their upgrading of the ground floor Secretariat suite by early 2005.

It is recognised that it is totally necessary to maintain the efficiency of the Secretariat during this time of transition, especially in the year in which there is a General Assembly to be held. Experience has shown, however, that the Secretariat, under the excellent leadership of Ekaterina Sukhanova, can maintain its efficiency even at times of transition, and that I am able to exercise my constitutional authority by the judicious use of e-mail, fax, phone and periodic visits.

The offices in Geneva are being renovated and will provide ample space for the work of the Secretariat. There are six offices, including a large committee room, and easy access to excellent conference facilities, situated in a large parkland with the backdrop of the mountains, and a landscape of mature old trees. It is also an advantage to the WPA that the Secretariat will be adjacent to an excellent library and dining room, and will never be able to forget the cardinal raison d'etre of the Association: to improve the well-being of psychiatric patients. The site of the Secretariat is accessible by public transport from the central station and the airport. It is also close enough to the World Health Organisation Headquarters.

The Secretariat would wish to place on record our sincere thanks to the Metropolitan Hospital in Manhattan, New York, and in particular to Dr. Ronnie Swift. She and the Metropolitan Hospital authorities have been generous in making available the interim office on the fourth floor. We have much appreciated the institutional support, and in particular the shared values with regard to the provision of services for a multi-cultural, multi-racial society.

Further news

Other work of the Secretariat this year has included the establishment of a staff personnel handbook and ensuring that our employment procedures are consistent with good human resource practice. Policies and procedures, job descriptions, and a system of annual appraisal have been introduced. The new edition of the Manual of Procedures is now available on the WPA website and in the Spring of 2005 will be available as paper copy. I would urge Member Societies to read this through, as this "Code of Practice", based on the Statutes and By-Laws, has important changes over its predecessor with regard to the election of Zonal Representatives and the financial arrangements for Member Societies hosting scientific meetings.

The General Survey has been completed by almost two thirds of WPA components; a full report will be available in World Psychiatry and WPA News by the Spring of next year. Preliminary findings are already influencing the strategic triennial plan for 2005-2008.

The WPA relies heavily on the work of the Chief Executive of the Secretariat and her committed team. She is ably supported by Karolina Rybicka-Kosiec, and by Joanne Woolridge at Keele, and was joined recently by Michelle Hussey in New York.

We look forward to working with you, welcoming you to Geneva and jointly facilitating the vision of our French initiators who in 1950 saw the need for international exchange of scientific information by psychiatrists. They recognised also the strength that can come from an institutional framework within which Member Societies can communicate with each other, improve the mental health of their societies and be better able to treat those experiencing the adverse consequences of mental disorder.

The Yokohama Declaration: an update

Mitsumoto Sato
Special Committee to Promote Yokohama Declaration, Japanese Society of Psychiatry and Neurology

According to the Atlas on Mental Health Resources in the World published by the World Health Organization in 2001, 52.2% of the countries in Africa, 51.9% of those in the Western Pacific Region, and 30% of those in South-East Asia do not have a mental health policy. Furthermore, 78.9% of the countries in Africa and 62.5% of those in South-East Asia spend less than 1% of their budget on mental health care. This evidence clearly indicates that immediate action is needed in the world, but especially in African and Asian regions, to improve mental health care and to provide the mentally ill with advanced psychiatric treatment. In every country, comprehensive and adequate treatment plans, including a balance of medications and advanced psychosocial intervention, should be implemented, with the agreement of the major partners in mental health programs, the patients themselves, and their families.

To this purpose, the Japanese Society of Psychiatry and Neurology (JSPN) proposed the Yokohama Declaration, which was approved by the WPA General Assembly on August 25, 2002, and which is reproduced below.

The Japanese Society of Psychiatry and Neurology:

- aware that the majority of people with mental illness in Asia and elsewhere in the world do not receive appropriate care;
- noting that the United Nations' resolution 119 recognizes the human rights of people with mental illness and that an appropriate treatment is a human right;
- noting with regret that less than half of the countries in the Asia-Pacific region and in the African region have set up mental health policies, as recorded in the 2001 WHO World Health Report on Mental Health;
- recognizing that the education and training in mental health matters is insufficient and not in keeping with current scientific knowledge;
- considering that the 12th World Congress of Psychiatry takes place in Yokohama, Japan, for the first time in the Asian continent;

recommends to all Member Societies of the WPA, particularly in Asia:

- To do everything in their power to introduce adequate and comprehensive treatment of mental patients in their countries. This means that mental patients receive a balanced treatment combining pharmacotherapy with advanced psychosocial interventions for an optimal outcome. This also means that humane conditions of treatment, both from the institutional point of view and in the relationship between mental health workers and patients, have to be promoted.

- To fight for rehabilitation of mental patients and their right to live in their community so that they obtain the best quality of life despite their illness.

- To contribute and help in the development of mental health policy, mental health legislation, and national mental health programmes, these being the necessary instruments for such positive change in all countries, especially in developing ones.

- To take an active role in the improvement of training and education in mental health matters, paying particular attention to the education of young psychiatrists.

- To ensure that all members of the community are involved in efforts to relieve the burden of the illness from patients and their families. Patients, their families, community agents, decision makers, health industry, media and other social forces should be seen and sought as important partners in this continuous endeavor.

The implementation of the Yokohama Declaration is currently ongoing in Japan. The JSPN changed the old Japanese term for schizophrenia (*seishin bunretsu byo*, that is, mind-split disease), corresponding to the concept of dementia praecox, into the new term of *togo shitcho sho* (integration disorder syndrome), corresponding to the modern concept of the disorder. This change is making psychoeducation much easier and is being useful to reduce misunderstandings about the illness and to decrease the stigma related to schizophrenia. The new term has been officially accepted by the Japanese medicine and media and is being adopted in the legislation in 2005. This exactly responds to some of the recommendations of the Declaration.

In response to the first recommendation of the Declaration, practice guidelines for the treatment of schizophrenia and mood disorders have been published in Japan. The mental health legislation will be revised in

2005. The Minister of Health, Welfare and Labor decided to discharge in the next few years 7,200 inpatients who are staying in the hospital because they are not accepted by their families.

In order to monitor the implementation of the Yokohama Declaration in the other Asian countries, we carried out a survey. We found that discussion about the contents of the Declaration is ongoing in all Asian countries and WPA Zones except the South Asian Zone, and that projects to implement the recommendations of the Declaration have been developed in all Asian countries except those of the South Asian Zone. These projects aim to improve the quality of mental health care and welfare by completing mental health policies, increasing financial resources, developing networks, and improving training of mental health professionals.

Several Asian countries and WPA Zones provided proposals for the promotion of the Declaration. These include nationwide collaboration; partnership with governments, non-governmental organizations, and the various disciplines involved in mental health care; remote awareness and public education campaigns; the establishment of an Asian Federation of Psychiatric Associations; the inclusion of mental health care and welfare in post-graduate curriculum and general physicians' training; the development of a network to circulate information among Asian countries; the development of practice guidelines for the treatment of major mental disorders; the improvement of mental health legislations and policies; and the promotion of anti-stigma programmes. A meeting aiming to monitor and promote the implementation of the Declaration was held in Kobe, Japan in October 2004. A Symposium focusing on the implementation of the Declaration will take place during the World Congress of Psychiatry in September 2005.

In conclusion, the implementation of the Yokohama Declaration is ongoing in many Asian countries, but continuing efforts are needed to take further concrete steps in the future. Moreover, the Declaration should be promoted in other parts of the world, especially in African countries.

The European psychiatrist and inter-organisational co-operation

BRIAN MARTINDALE
WPA Zone Representative, Western Europe

This article summarises some recent developments in the co-operation between psychiatric organisations in Europe and reproduces in full a consensus statement on "Psychiatric services focussed on a community: challenges for the training of future psychiatrists", which is one product of this co-operation.

Background

Over some time, a number of European-wide psychiatric groups have been developing, of which the following are the main ones:

The World Psychiatric Association (WPA) is a global organisation with some aspects of its many functions and activities having a regional basis. There are five zonal representatives covering the 52 countries of Europe. Membership of the WPA is principally through its 130 member psychiatric organisations.

The European Union of Medical Specialists (UEMS) has a large number of subspecialties, of which Psychiatry and Child and Adolescent Psychiatry are two. The Psychiatry Section and Board are composed of representatives from the European Union countries, with the possibility of associate membership for European Union applicant countries. It focuses on quality assurance in psychiatry and defining recommended training standards in selected areas, to support national developments in psychiatry.

The Association of European Psychiatrists (AEP) aims to improve the quality of mental health care by a number of means, with a special focus on continuing medical education (CME). It has recently developed an extensive programme of itinerant educational courses covering most European countries. Its membership is of individual psychiatrists.

The World Health Organisation (WHO) has increased its focus on mental health. Its objectives are to close the gap between what is needed and what is available and reduce the burden of mental disorders worldwide and promote mental health. It works with governments aided by National Counterparts and has a European Regional Office.

In addition to this, each European country has its own psychiatric organisation(s).

In 2001, immediately prior to a WPA Regional Meeting in London, the first meeting for many years took place between the leaders of the European wide organisations and leaders of the national psychiatric organisations in Europe. This has been followed by annual and sometimes twice yearly meetings. Two major issues have emerged. Firstly, nearly all psychiatric leaders spoke of various difficulties and perhaps threats to the identity of the psychiatrist in contemporary Europe. Secondly, it was pointed out that the activities of the European-wide organisations overlap in some areas, sometimes leading to unhelpful competition within the profession, a poor use of resources, and ineffectiveness and confusion if there are inconsistencies in recommendations.

THE AEP/UEMS/WHO/WPA Task Force

In 2002, at the meeting of leaders of European psychiatry prior to the AEP

Congress in Stockholm, a European Task Force was instituted with two representatives from each of the WPA, AEP and UEMS and also including the WHO European Regional Adviser for Mental Health. This group has taken over the organization of the annual meetings of European leaders and has begun to undertake tasks that will address the issues mentioned in the previous paragraph.

Continuing medical education in Europe

An important topic that the Task Force has made considerable headway with is to tackle the existing situation whereby international meetings are given CME credits by a number of different authorities without common agreement on standards or point systems. The credits therefore become relatively meaningless. Starting from November 2004, the Task Force has become the technical arm for psychiatry of the European Accreditation Council/CME (EAC/CME) system, which accredits international medical events taking place in Europe, with credits which are already recognized or are going to be recognized by the relevant authorities of all the countries of the European Union.

The identity of the European psychiatrist

As already mentioned, the issue of the contemporary struggle to maintain a good enough or clear enough identity of the psychiatrist in European countries was a recurrent theme or sub-theme in the discussions of European leaders. The difficulty was exemplified by anxieties resulting from the growth, organisation and practice of different modalities of psychotherapy by practitioners who are not psychiatrists and at the other end reports that the treatment repertoire of other disciplines in the mental health field could be including freedom to prescribe certain medications used in the mental health field. After a successful meeting of European leaders in Vienna, where presentations and discussion stemming from the excitement of increasing knowledge of the brain and its functioning in mental disorders was balanced by an equally stimulating discussion of the ongoing fascination in understanding and working with the psyche in psychiatry, a very important meeting was held in Geneva in May 2004 out of which has arisen the consensus statement below.

The meeting took, as a given, that the community will be the central focus for mental health services, and it addressed directly the changes in approaches and trainings needed to best equip the psychiatrist in his or her roles as a key member of mental health teams and their development. It is hoped that the following statement will be of assistance in furthering the development of the status and core identity of psychiatry in European countries and in developing training to provide the necessary skills as psychiatrists carry out their roles with renewed pride, satisfaction and confidence. The statement should also assist in developing the contents of CME programmes and the life long learning and development of all psychiatrists.

Consensus statement - Psychiatric services focussed on a community: challenges for the training of future psychiatrists

Contextual issues

Throughout Europe, psychiatry in the community continues to evolve both conceptually and in practice, leading to considerable changes of emphasis:

1) A much greater emphasis is on providing services that respond to (and are organised around) the needs of service users and family and carers. (In contrast to their needs having to adapt to settings and frameworks dictated by services).

2) Services therefore need to be mobile and flexible.

3) Inpatient services or alternative residential treatment settings are part of and back up community services (rather than being at the centre).

4) Mental health services have become multi-disciplinary and multi-agency with several disciplines and agencies possessing specific skills and competencies.

5) Community based treatment services should cover the full spectrum of mental illnesses and disturbances.

6) Surveys have shown that patients do not always experience sufficient respect from psychiatrists and they tend to be more distant than other mental health professionals. Mental health professionals themselves (irrespective of discipline) show some features of stigma towards patients. These findings have considerable training implications and need to be acknowledged for both clinical purposes and for the favourable development of the identity of the profession.

7) Modern psychiatrists need to be highly trained in all three of the bio-psycho-social aspects of mental health and illness. Biological knowledge and physical treatments are one core component of the psychiatrist's skills. Knowledge of social determinants of illness is a second core component. The third is being able to maintain an ability to relate well to patients and carers and to be skilled and knowledgeable in a variety of psychotherapeutic techniques. (Basic science knowledge has increased considerably in recent years and neuro-psychiatry will inform important aspects of all psychiatric practice. However, what follows will focus more on the context and psycho-social aspects of that identity and training)

The competencies of psychiatrists therefore come under a number of headings:

A) Clinical treatments
B) Clinical management
C) Education and training
D) Operational management
E) Research and evidence based practice
F) Joint working
G) Leadership

Training implications

1) The emphasis of the training of the psychiatrist in the community will vary somewhat according to the resources of the country. A) In low level resource countries, most mental health care should be provided in primary care, with psychiatrists being used for training personnel in primary care as well as consultation. The psychiatrist will be more centrally involved in complex cases in the community as well as being trained in hospital or alternative residential care. B) In medium resource countries or areas, this support and training for primary care workers remains important, but mainstream mental health services also include outpatient clinics and community mental health centres and day care. C) In high resource countries, additional community psychiatry resources will be added to A) and B). These will include specialist and differentiated mental health facilities focussing on specific problems such as eating disorders, addiction problems as well as early intervention services and assertive community treatments and a variety of vocational training programmes. There will be more sophisticated alternatives to both acute hospital beds (crisis and home treatment teams) and to those needing long term care (hostels and residential homes).

2) Psychiatrists' training needs to take place in a variety of community settings especially in primary care so that they will become confident at working flexibly in different environments with colleagues and with the patients and their families. Psychiatrists should be familiar with the legal aspects relevant to community work.

3) Psychiatrists need to be trained to acquire skills at multidisciplinary practice and in multidisciplinary team work and in working with other agencies. This involves understanding and being able to manage group dynamics and to know how to partake in shared non-hierarchical decision making.

4) Psychiatrists need to train so that they have good skills at negotiating with patients and be able to address and coordinate therapeutic responses to patients' needs and disabilities as well as symptoms.

5) Psychiatrists need to train so that they have good skills at engaging families and assessing their burdens and strengths.

6) Psychiatrists need a good training in the core psychotherapeutic skills that enable respect and accurate empathy for patients and their families. They should be familiar with and able to manage their own particular emotional reactions to a wide range of personalities, behaviours, feelings and other phenomena encountered in clinical work. Psychiatrists should ensure that psychological treatment skills are available and appropriately organised in the community to treat the whole range of mental disorders that benefit from such approaches.

7) Psychiatrists should engage with public groups in discussions that inform them on how their attitudes to patients and families are perceived. Psychiatrists need to be aware of any tendencies in themselves and colleagues to stigmatise patients. Surveys and audit by patients and families and other professionals may be valuable tools at ongoing assessment.

8) Psychiatrists should be good at teaching persons from other disciplines and the public.

9) Psychiatrists should be able to know how to contribute on the one hand to assessing the mental health needs of a particular population and on the other be familiar with issues connected with globalisation.

10) Psychiatrists should be good negotiators of resources for mental health services. The percentage of DALYs (disability adjusted life years) due to neuro-psychiatric disorders is on average 20% worldwide and will rise considerably in the next decade. The percentage of health budgets for these disorders is far less.

11) Psychiatrists need to be well trained in evaluating service provision from two domains – that of evidence based medicine and that of the views of users and carers.

12) Psychiatrists should participate in life long learning and develop CME training plans that cover the full range of their roles.

13) There is a danger that working in some communities in mental health teams could lead to the professional isolation of psychiatrists. Programmes will need to attend to this without encouraging defensive retreat into hospital settings.

14) Working in the community must not lead to loss of skills of psychiatrists in contributing to effective and therapeutic wards, residential settings and other alternatives to hospital nor lead to a restriction of the scope of psychiatry as a discipline and a profession (e.g., an exclusive focus on psychotic disorders).

15) The community psychiatrist needs skills at working with patients with psychosomatic problems and with colleagues to whom they may present as well as psychiatric complications of medical disorders.

16) The organisation and definition of subspecialties within psychiatry will vary from country to country as will the organisation of services according to different age groups of patients.

(*We are greatly indebted to Professors G. Thornicroft and W. Roessler for presentations that set the scene for our discussions and helped crystallise many of the ideas expressed*).

The WPA Regional Congress 'Advances in Psychiatry"

GEORGE CHRISTODOULOU
Chairman, Organizing Committee

The WPA Regional and Intersectional Congress 'Advances in Psychiatry' will take place in Athens, Greece from 12 to 15 March 2005. It will be the first time that all 60 Scientific Sections of the WPA will convene to exchange ideas on scientific and policy issues. All Sections have been invited to participate and present an authoritative update paper on the progress achieved during the last three years in the scientific area covered by each Section. These updates will be published in the second volume of 'Advances in Psychiatry' (updates of the WPA Scientific Sections). Stimulating and productive discussions are anticipated. The Sections are the scientific backbone of the WPA and the Congress will provide them with the opportunity to show that they stand up to this expectation. The performance of the Sections up to now has been admirable and most WPA scientific events are based on their contribution. For example, in the WPA International Congress held in Florence last November, as many as 54 Sections presented Symposia.

The Congress will also focus on the scientific production, achievements, problems and perspectives of the countries of three WPA Zones (South Europe, Central Europe, Eastern Europe) with particular emphasis on the area of Eastern Europe and the Balkans for which a special Institutional Program of the WPA has been established. In addition to the above, there will be invited lectures and symposia by eminent professionals in our field. We anticipate a wonderful and scientifically rewarding Congress and invite all of you to submit presentations and research contributions. We look forward to welcoming you to Athens, the city of the Olympics, in March 2005.

For information and abstract submission forms, please visit the website http://www.era.gr/wpa2005athens.htm.

The new WPA Section on Stigma and Mental Disorders

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The WPA, through its Global Program to Fight Stigma and Discrimination because of Schizophrenia, has identified stigma as a major challenge. Stigma creates a cycle of discrimination and social exclusion for those who suffer from a mental disorder, as well as all of those who are associated with them. More so than the illness itself, stigma is the single most important barrier to the quality of life of people with mental disorders, their family members, and friends. It is also a major impediment to mental health reform and service development.

The majority of people with mental illnesses are now treated in the community, where negative public opinions can have significant consequences, ranging from human rights violations to discriminatory unemployment and housing practices, as well as diminished self-esteem. Stigma, and the expectation of stigma, can also produce disruptions in family relationships and reduce normal interactions.

Therefore, stigma and its consequences pose major obstacles to recovery and promote psychiatric disability. A new WPA Section on Stigma and Mental Disorders has been established on an *ad hoc* basis, under the co-chairmanship of Wolfgang Fleischhacker (Austria) and Heather Stuart (Canada), awaiting final approval at the World Congress in Cairo. The Section will engage in activities designed to reduce stigma and discrimination because of mental disorders and improve social inclusion for people with mental illness and their families.

More specifically, the Section will: a) disseminate information about stigma and discrimination because of mental disorders through academic and technical publications, and through symposia and courses offered at WPA regional meetings and congresses; b) advance scientific knowledge about stigma through collaborative research and evaluation; c) provide training opportunities to support the development of effective programs to fight stigma and discrimination because of mental disorders.

Any individuals who are interested in becoming members of this Section are invited to contact the Section Secretary, Richard Warner, at Dick_Warner@compuserve.com, including a brief note on their recent activities in this area as well as complete contact information.

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