WHO/MNH/EVA/88.1

Distr.: GENERAL

PREVENTION OF MENTAL, NEUROLOGICAL AND PSYCHOSOCIAL DISORDERS

WORLD HEALTH ORGANIZATION
Geneva

15481

PREVENTION OF MENTAL, NEUROLOGICAL AND PSYCHOSOCIAL DISORDERS[1]

Report by the Director-General[2]

1. Mental, neurological and psychosocial problems are of major public health importance. Methods for the prevention of a number of them have become available in recent years. The Director-General prepared a review of such problems, assessing their magnitude and specific measures of proven effectiveness that could be taken to prevent them. He submitted the report to the Executive Board at its seventy-seventh session in January 1986 and invited it to make recommendations to the Health Assembly concerning action to be taken at national and international level and to apply those measures. The deliberations of the Board[3] were used in updating the report, which is reproduced here.

---

[1] See resolution WHA39.25.

[2] This report was originally prepared for the Thirty-ninth World Health Assembly as document A39/9, and has been updated to include the Health Assembly's discussions on it.

[3] See document EB77/1986/REC/2, pp. 138-144.

CONTENTS

I. INTRODUCTION

Purpose and scope

1. This report has four purposes; (a) to indicate the magnitude of the public health burden resulting from mental, neurological and psychosocial disorders and problems; (b) to demonstrate the extent to which this burden can be reduced by preventive methods; (c) to recommend action on a set of prevention programmes chosen because they address important problems, are cost effective, and are not at present given the priority they merit; and (d) to indicate research needs.

2. The report focuses on methods that are effective in reducing the incidence, prevalence or chronicity of mental and neurological disorders. Treatment is referred to only when it permits the prevention of secondary consequences which themselves are within the scope of the report (e.g., treating hypertension in order to prevent stroke). In such cases, the treatments themselves are listed rather than described. Because the emphasis is on disease prevention, the report does not examine issues concerning the promotion of mental health (e.g., methods to enhance normal function), an important topic in itself but beyond the present scope.

Definition of prevention

3. Primary prevention refers to methods designed to avoid the occurrence of disease or impairment (e.g., the provision of a balanced diet to avoid pellagra or of immunization against measles to avert mental retardation from measles encephalitis).

4. Secondary prevention refers to early diagnosis and treatment to shorten illness episodes, to minimize the chance of transmission of disorder or disease, and to limit disease sequelae. Timely treatment of certain conditions may also have primary preventive effects on other conditions: control of hypertension can prevent the occurrence of cerebrovascular disease, and control of epileptic seizures can reduce work injuries, road accidents, and severe burns due to seizures.

5. Tertiary prevention refers to measures to limit disability and handicap consequent upon impairment or disease which may not be fully treatable. For example, a rapid, relevant response in the community to sudden decompensations in personal and social functioning can prevent the development of a chronic social breakdown syndrome in people with schizophrenia and other serious mental disorders. In such cases

it is not so much the disease (e.g., schizophrenia or post-traumatic dementia) per se, but the way the patient care system responds, which determines the extent of the disability of the patient.

Feasibility and urgency of prevention of many mental, neurological and psychosocial problems

6. Proposals for prevention programmes in the field of mental health often meet with negative attitudes and responses, partly because of unrealistic promises made several decades ago about the results to be expected from measures such as the introduction of child guidance clinics or from the application of intensive psychotherapy; also because it is still not possible to design effective programmes for the primary prevention of certain severe mental disorders such as schizophrenia or the affective disorders. But this no more justifies overlooking measures that can prevent other neuropsychiatric disorders than the lack of an effective vaccine against certain parasitic diseases warrants abandoning immunization against measles or poliomyelitis.

7. Mental hospitals at the turn of the century were filled by many cases of general paresis and pellagra, both diseases have become rare in many countries, the first because of the effective treatment of syphilis, and the second because of improved diet. Many other important neuropsychiatric disorders such as cretinism can be sharply reduced by measures available today, if such measures were to be applied to all those who could profit from them. In the case of other mental disorders (e.g., the schizophrenias and the affective disorders), chronic loss of the ability for self-care and troublesome behaviour can be minimized if the health team, community and family provide prompt and constructive responses to the occurrence of the disorder. Education of the public to overcome entrenched prejudice against the mentally ill will also be necessary.

II. THE MAGNITUDE OF THE PROBLEM

Mental and neurological disorders

8. The magnitude of problems linked to mental and neurological disorders is generally underestimated for at least three reasons:

(1) vital statistics traditionally measure mortality rather than morbidity - but many mental neurological and psychosocial disorders have a far greater effect on function and quality of life than on mortality per se;

(2) even where morbidity is recorded, health information systems usually do not appropriately monitor the extent of neuropsychiatric morbidity;

(3) the tabulation of mortality or morbidity by disease often fails to indicate behavioural causes of physical disease: for example, acquired central nervous system lesions resulting from motor vehicle accidents which are secondary to unwise use of psychotropic drugs.

9. This fact has to be borne in mind in trying to understand the discrepancy between common impressions about the size of the problem and the results of investigation and other evidence presented below.

Mental retardation

10. The prevalence of severe mental retardation below the age of 18 years (defined by an intelligence quotient - I.Q. - of less than 50 and major disabilities in intellectual and social function, usually associated with neurological abnormalities) is approximately 3 to 4 per thousand; the prevalence of mild and moderate mental retardation (defined by an I.Q. between 50 and 70 and by marginal performance at school in complex intellectual tasks) is approximately 20 to 30 per thousand. These figures are likely to be underestimates for many areas of the developing world because of the persistence of preventable mental retardation secondary to (a) faulty delivery methods which lead to birth trauma and (b) bacterial and parasitic infections of the central nervous system (1). Of greatest importance from the standpoint of prevalence is the mild mental retardation and behavioural maladaptation that results from the interrelated problems of malnutrition and cognitive understimulation in infants reared in severely disadvantaged families. The world population of retarded persons numbers between 90 and 130 million.

Acquired lesions of the central nervous system

11. Damage to brain tissue - resulting from trauma, bacterial and parasitic infections, alcohol abuse, malnutrition, hypertensive encephalopathy, pollutants (e.g., carbon monoxide, heavy metals, chemical fertilizers, and insecticides), lack of essential nutrients and other conditions - constitutes a major source of mental and neurological impairment. It has

been estimated that no less than 400 million people suffer from iodine deficiency, their children being at risk of mental and neurological disorders associated with foetal damage due to the deficiency (2). Debilitating effects of cerebrovascular accidents secondary to uncontrolled hypertension are a rapidly increasing problem in developing countries. Cerebrospinal meningitis, trypanosomiasis and cysticercosis are major sources of brain disorders in a number of countries. Persistent infections, even when the brain is not directly invaded, impair cognitive efficiency.

Peripheral nervous system damage

12. Inadequate and/or unbalanced diet (e.g., cassava neuropathy), metabolic diseases (diabetes), infections (leprosy), trauma and toxins can cause incapacitating peripheral neuropathies. Besides their direct effects on motor and sensory function, neuropathies can have numerous social and psychiatric consequences because of the impairments that may result (3).

The psychoses

13. The prevalence of severe mental disorders such as schizophrenia, the affective disorders, and the chronic brain syndromes is estimated conservatively at not less than 1%; somewhat more than 45 million mentally ill people the world over suffer compromised social and occupational function because of these conditions. According to WHO data, the annual incidence of schizophrenia is approximately 0.1 per thousand in the population 15 to 54 years of age, and the prevalence, according to several surveys is 2 to 4 per thousand. There are no demonstrable differences in these figures between developing and developed countries (4). The rate for depressive disorders is several-fold higher. Moreover, the incidence of depressive disorders has shown a striking increase in some countries. The amount and kind of treatment services, as well as the attitude of family and community towards patients suffering from these disorders, are important determinants of their outcome.

The dementias

14. Dementia is not part of normal aging, but represents a disease, the cause of which should be sought and if possible treated: metabolic, toxic, infectious and circulatory diseases can all be the cause of impaired mental function (5). These disorders constitute an ever greater burden on health services as an increasing proportion of the population survives to older ages and becomes vulnerable to senile dementias of the Alzheimer type.

The prevalence of senile dementias in individuals aged 70 years or older is estimated at about 100 to 200 per thousand in countries where surveys have been carried out. Isolated reports of lower incidence of dementia in certain developing countries in Africa merit special attention since they may provide important clues for the etiology and prevention of the condition (6).

Epilepsy

15. The prevalence of epilepsy in the population ranges from 3 to 5 per thousand in the industrialized world to 15 to 20 or even 50 per thousand in some areas of the developing world. This tenfold difference in prevalence provides a measure of what could be accomplished by a comprehensive programme of prevention in the developing countries. The extent of social handicap resulting from epilepsy varies with its type, but also with the adequacy of medical management, and with community acceptance of or support for the patient with epilepsy. Unfortunately, in many developing countries, the majority of patients with epilepsy receive little or no treatment; in consequence, they suffer from avoidable physical injuries and social handicaps.

Emotional and conduct disorders

16. Such disorders (particularly neurotic and personality disorders) are estimated to occur at a frequency of 5 to 15% in the general population. Not all require treatment, but some (e.g., severe anxiety disorders) can lead to major impairment. Conduct disorders, which are common among schoolchildren and interfere with learning in the classroom and with social adjustment, often respond well to simple treatments (e.g., behaviour therapy and parent counselling), although recurrence is common (7). Learning disorders, whether or not they are associated with other psychiatric symptoms, require special help in the classroom in order to avoid secondary emotional problems and occupational handicaps (e.g., those associated with failure to learn to read).

Health-damaging behaviours

Psychoactive substance abuse and dependence

17. Alcohol-related problems. Recent decades have witnessed considerable increases in alcohol consumption and in alcohol-related problems (including death from alcohol poisoning) in most parts of the world. Alcohol abuse by the individual has devastating effects on the family. A particularly tragic consequence of drinking during pregnancy is the foetal alcohol syndrome. In the WHO European Region, the number of countries with an annual per capita intake of more than 10 litres of pure

alcohol increased from three in 1950 to 18 by 1979. Countries in the WHO Western Pacific Region report sharp increases during the 1970's in alcohol-related health damage, in alcohol-related crimes, and in alcohol-related accidents (8).

18. Similar reports have emerged from countries in other WHO regions, including those with long traditions of abstinence from alcohol. Although some countries in Europe and North America are now reporting a levelling off - and even a modest decline in alcohol consumption, the global trend is still that of continuing growth, with particularly sharp increases in commercially produced alcoholic beverages in some developing countries in Africa, Latin America and the Western Pacific (9). It is notable that in Australia, between 1978 and 1984, a 10% reduction in per capita consumption of alcohol was accompanied by a 30% reduction in deaths caused by alcohol.

19. In many countries, alcohol use is increasing rapidly among adolescents and among women. These increases in global alcohol consumption are likely to have serious public health implications, because there is a very substantial body of evidence that a direct relationship generally exists between trends in consumption and trends in alcohol-related problems. As national alcohol consumption increases, so do rates of whatever alcohol-related problems are typical in that country. These can range from cirrhosis of the liver to problems at work and in the home, and, in more and more countries, to alcohol-related traffic accidents.

20. Drug abuse. Analysis of trends in the frequency and severity of drug abuse and drug dependence has revealed a general increase in the problem in most countries. It was recently estimated that there is a total of 48 million drug abusers in the world, including 30 million cannabis users, 1.6 million coca leaf chewers, and 1.7 million opium-dependent and 0.7 million heroin-dependent persons (10). Cocaine abuse is known to be widespread and increasing although no reliable figures exist. These figures almost certainly underestimate the magnitude of the problem. Amphetamines, barbiturates, sedatives and tranquillizers are consumed in most countries and their abuse, as well as multiple drug abuse, is increasing throughout the world, parallel to their increasing availability on both licit and illicit markets. There is a trend to (multiple) drug use in conjunction with alcohol. The sniffing or inhaling of volatile solvents and other inhalants is also spreading in a number of countries, particularly among pre-adolescent and early adolescent urban populations. With an expanding market, large regions have become dependent on the income derived from growing cannabis, the opium

poppy and the coca shrub, which adds to the difficulty of implementing control measures.

21. Psychotropic drug abuse. The very considerable benefits from the appropriate use of psychotropic drugs can be offset by their abuse. The ready availability of psychotropic substances sold over the counter without prescription in many countries, insufficient and often misleading information given to the general public, and inappropriate prescribing practices by physicians (who often employ medication instead of counselling in response to the pressures of a busy practice or because of insufficient training) have led to overuse and abuse of psychotropic drugs and a variety of consequent public health problems (11). The magnitude of these problems varies between countries, and epidemiological evidence is still lacking for most countries where anecdotal reports give rise to serious concern.

22. Tobacco dependence. Smoking is a socially induced behavioural pattern which is maintained by the development of dependence on nicotine. One-third of all cases of cancer, at least 80% of all lung cancer, 75% of chronic bronchitis and 25% of myocardial infarction in the United States of America are due to cigarette smoking (12). Between 1976 and 1980 tobacco consumption decreased at a yearly rate of 1.1% in the industrialized countries, but continued to rise at a yearly rate of 2.1% in the developing countries. Besides premature deaths, which have been estimated at over 1 million per annum, innumerable cases of debilitating diseases (such as chronic obstructive lung disease) are also due to smoking. The proportion of women of reproductive age who smoke regularly, already high in most industrialized countries, has been increasing rapidly in the developing world. There is now evidence of health risks from "passive smoking", i.e., inhalation of smoke produced by smokers in a confined environment at home or in the workplace. These trends, and possible measures to counter them, are described in the Director-General's report to the seventy-seventh session of the Executive Board (see document EB77/1986/REC/1, Annex 3).

Conditions of life that lead to disease

23. Many health-damaging modes of living are the result of factors beyond the control of the individual: homelessness, unemployment, lack of access to health and social services, the loss of social cohesion in slum areas, forced migration, racial and other discrimination, forced idleness in refugee settlements, "conventional" wars, and the threat of nuclear war. These issues will necessarily be of concern to every component of WHO and to other national and international organizations, but they are beyond the scope of this report except to note their impact.

24. In addition to these broad social forces, factors manifested in individual behaviour - termed "life-style" - can influence the risk of disease. Although the relative contributions of excess animal fats in the diet, insuffient physical exercise and psychosocial stress to the pathogenesis of the epidemic of cardiovascular disease in the industrialized world cannot be specified precisely, most authorities agree that they are important risk factors. The inclusion of "life-style" here does not imply that one or other pattern of eating or exercising is a "psychiatric disorder" (except in extreme instances such as anorexia nervosa and bulimia), but it is intended to emphasize (a) the contribution of behaviour patterns to disease pathogenesis (e.g., patterns of food preparation as determinants of the risk for cysticercosis, which produces lesions of the central nervous system) and (b) the importance of making full use of mental health and psychosocial skills and knowledge in designing interventions aimed at preventing disease secondary to such behaviour (e.g., dealing with cultural beliefs in an appropriate manner to improve the acceptability of health measures). In this connection, methods of coping with excessive stress merit further study. "Stress" is an unavoidable part of life; indeed, mild and moderate levels of stress can improve performance under appropriate circumstances. Stress becomes a pathological agent when it is intense, persistent, and generally beyond the coping capacity of the individual exposed to it.

Violence

25. Violence (accidents, homicide and suicide) is one of the leading causes of death in most countries, and accounts for a high proportion of years of life lost. Psychosocial factors and mental disturbance play an important role in the occurrence of violence which, although not conventionally regarded as a "medical" problem, is an important source of mortality and morbidity (including in particular neuro-psychiatric morbidity following damage to the central nervous system). Child abuse and wife battering are among the particularly dramatic indicators of violence in the family. Dealing with the consequences of violence for the victim can be significantly facilitated if mental health care skills are used (13).

Excessive risk behaviour in young people

26. Such behaviour (e.g., experimenting with drugs and alcohol, sexual activity without precautions against sexually transmitted diseases, adolescent pregnancy, driving at excessive speed, and generally challenging established guidelines for health and safety) results in serious morbidity and mortality. Pregnancy in young teen-agers (15 years or less) leads to a

cycle of disadvantage. The immature mother is unable to care properly for her child, while her responsibility for child care is a barrier to the education and employment essential for her own growth. The shortage of child care facilities in most communities compounds the problem. This and other health risks for adolescents have been the subject of previous WHO reports (14).

Family breakdown

27. Family breakdown, evident in increasing rates of divorce and separation and in the weakening of ties between generations interferes with the upbringing of children. Households headed by a woman are more likely to be below the poverty threshold, adding to the mother's difficulty in raising a family. Weakened family units also contribute to community disorganization, with a variety of consequent psychosocial and other health problems.

Somatic symptoms resulting from psychosocial distress

28. Many patients who consult health staff at the first contact level exhibit no ascertainable organ pathology, or complain of discomfort and dysfunction disproportionate to the physical problem. Clinical studies in industrialized countries indicate that such is the case in 30 to 50% of all consultations; in developing countries, such patients make up about 15 to 25% of those coming to the attention of health care personnel, the largest single complaint category in primary care (15, 16). Unfortunately, the narrow biological focus in much of health professional training has resulted in failure to appreciate the importance of recognizing and dealing with distress resulting from psychosocial factors. Unless the psychosocial source of the physical symptoms is recognized by health care personnel, patients will be inappropriately investigated and medicated, will incur excessive expense, and repeatedly seek relief for the symptoms.

III. PROPOSALS FOR ACTION

29. Although the proposals for action in this section have been organized under three headings (relating to the health sector, other social sectors, and the governmental level), intersectoral coordination is essential to their success. For example, action taken against drug abuse through the primary health care system, schools and the media will be relatively ineffective in the absence of government policy to support and reinforce that action.

Measures to be undertaken by the health sector

30. Success in carrying out preventive and therapeutic measures in the health sector depends greatly on the psychosocial skills of primary health care workers (sensitivity, empathy and ability to communicate) as well as on a thorough knowledge of the community, its culture and its resources. Therefore, training in generic psychosocial skills is no less essential to the education of these workers than is the customary technical training. In the absence of such skills in clinical practice, diagnostic errors multiply, the patient's adherence to treatment recommendations declines, health workers give up, and the health facility will fail to achieve its goals.

31. Among specific measures which can be taken by the health sector, the following five groups stand out as being particularly timely and promising.

WHO initiatives to be intensified

32. Prenatal and perinatal care. In view of the need to protect the foetus and the newborn child and to provide optimum conditions for development, and in view of the high mortality and morbidity associated with prematurity and low birthweight:

(1) high priority should be given to (a) adequate food, (b) education for all pregnant women about nutrition in order to prevent cognitive failure in their children and (c) information for all pregnant women about the importance of immunization and the schedules for immunization of their infants;

(2) direct counselling of pregnant women against smoking and drinking by health workers should be undertaken because it can reduce the prevalence of developmental anomalies and low-birth weight caused by cigarette smoking and alcohol use in pregnancy;

(3) in areas where neonatal tetanus is prevalent, pregnant women should receive tetanus toxoid after the first trimester; birth attendants should be trained in techniques for cutting the umbilical cord;*

*Although neonatal tetanus and iodine deficiency are prevalent only in certain areas of the world, where they do occur they have considerable adverse effects on the normal psychological development of children as well as causing high mortality. More important: both conditions can be almost totally prevented by relatively simple means.

(4) in iodine-deficient areas, women of child-bearing age should be given iodized oil injections or iodized salt which can prevent the congenital iodine deficiency syndrome (2);

(5) birth attendants should be trained in recognizing the indications for high risk pregnancies in order to refer complicated deliveries to back-up obstetrical facilities since the prevention of obstetrical complications can lead to a significant reduction in the number of children with damage to the central nervous system;

(6) the promotion of breast-feeding should be an integral component of primary health care in view of the physiological and psychological benefits that breast-feeding confers;

(7) Mental health activities must be integrated into maternal and child health programmes.

33. Scientific advances in the detection of congenital and hereditary diseases and risk factors during pregnancy and the neonatal period have created new possibilities for prevention. However, they require impeccable laboratory technique, careful follow-through, and the provision of appropriate therapeutic interventions. Their use depends upon local decisions about resource allocation and the resolution of attendant ethical issues.

34. Programmes for child nutrition (including the education of mothers about nutrition) are a major component of prevention in view of the role that malnutrition and inadequate child rearing can play in impairing cognitive and social development.

35. Immunization of children against measles, rubella, mumps, poliomyelitis, tetanus and diphtheria could make an important contribution to the prevention of brain damage caused by these diseases in children.

36. Family planning. In view of the strong evidence that child development is adversely affected when the mother has too many children at too short intervals, and when she is under the age of 15, education on family planning and access to effective means of contraception are essential elements of maternal and child care. Appropriate attention should be given to psychological factors in family planning in order to minimize psychosomatic complications from the use of contraceptive methods, once the desired family size has been reached. A multi-country study carried out in 1978-1983 to assess possible psychological effects of tubal ligation showed no negative mental health effects attributable to sterilization (17). Genetic counselling, as part of family planning, can help to minimize

hereditary diseases in families known to be at risk.

Measures to prevent abuse of and dependence on psychoactive substances in primary health care

37. Health workers should routinely ask about smoking and counsel patients against it. This simple intervention is about as effective as more elaborate measures. Though only 3 to 5% of patients will respond by stopping smoking, this measure has a large public health pay-off in view of the prevalence of smoking in the population; if 5% of the many hundred million smokers were to respond to such advice from health workers, millions of individuals would be spared the health hazards of smoking. Moreover, repeated efforts ensure a cumulative rate of success, and low initial response should not discourage the health worker.

38. Health workers can be trained, by the use of an appropriate short set of questions, to identify alcohol and drug abuse early, using manuals and guidelines produced and tested by WHO in a number of countries. Brief counselling can help a significant number of patients (though not all) to alter their behaviour before dependence and irreversible damage result (18).

Crisis intervention in primary health care

39. In the event of acute loss (e.g., death of a spouse, which increases the risk of morbidity and mortality among survivors), there is some evidence that group and individual counselling of the bereaved can diminish risk. Self-help and mutual aid groups (e.g., among widows) can improve health status at minimum cost to health services. These measures can be incorporated into health services by short courses of training (19, 20). The acute psychological distress associated with divorce has been shown in a recent controlled clinical trial to be reduced by group counselling, with significant levels of benefit persisting for several years after the intervention (21). Well-trained crisis intervention units have been shown to handle a variety of acute mental health problems effectively, thus preventing more chronic difficulties and social disadvantages to the patients (22).

Prevention of iatrogenic damage

40. Health workers can be trained to enquire routinely about psychosocial problems in the course of evaluating new patients. This will enable

them to recognize symptoms which are the expression of psychological distress and to avoid overuse of psychotropic (and other) drugs and the iatrogeny which results from such practices. Brief counselling and, where necessary, referral of patients to social welfare or mental health workers can significantly diminish the burden of repeated clinic visits.

41. Behaviour disorders which are the iatrogenic effect of prolonged or repeated hospitalization can be prevented by minimizing the hospitalization of children, by encouraging family participation when hospital care is unavoidable, and by introducing certain organizational arrangements in hospitals (e.g., assigning a primary nurse to each child. Mental deterioration in the elderly can be prevented by avoiding unnecessary hospitalization.

42. Although measures to prevent dementia must await the results of further research, cognitive impairment resulting from depression and infection can be reversed by appropriate treatment if it is promptly applied. At present, the distinction between dementia and depression in the elderly is not recognized by the family doctor in four out of five cases (23). Relatively short training can improve physicians and other health workers diagnostic skills significantly in this area.

Minimizing chronic disability

43. Education of health workers - in the recognition of sensory and motor handicaps in children, in the use of prosthetic devices to minimize these handicaps, and in the appreciation of the importance of referring such children to the educational authorities for appropriate educational measures - is feasible and can prevent both cognitive under-achievement and social maladjustment.

44. Properly fitted eyeglasses (which can be obtained at very low cost) and hearing aids, can reduce the likelihood of mental and social handicaps in children with sensory impairment (24). Community rehabilitation of persons with locomotor handicaps can make it possible for them to work and live independently, thus avoiding the psychological problems of chronic dependency.

45. Because the incidence of cerebrovascular accidents and consequent brain damage can be reduced by the effective treatment of hypertension, comprehensive programmes for the diagnosis and treatment of hypertensive disease should be included in primary health care; in similar fashion, acquired lesions of the central nervous system can be prevented by prompt identification and treatment of infections such as meningitis.

46. Health workers can and should be trained to manage febrile convulsions, to recognize epilepsy, and to control seizures by low-cost anti-convulsant drugs in order to minimize damage to the central nervous system from prolonged seizures, to reduce accidental injuries (such as burns in epileptics), and to reduce the psychosocial invalidism and isolation which results when treatment is not provided. An uninterrupted supply of drugs of assured quality is of paramount importance. Primary health care workers should take the lead in combating negative attitudes towards epilepsy in their communities (25, 26). Care for the mentally ill will be greatly facilitated if mental health services are provided also in general hospital units and if there is a continuum of care, with assured quality control from primary health care to specialized institutions.

47. Health workers should be trained to recognize schizophrenia and manage it with low-dose anti-psychotic drugs and counselling and support to family members in order to minimize chronicity and to avoid the social breakdown syndrome which leads to severe social disability (27, 28).

48. Health workers should be alerted to the need for the treatment of patients thought to be suffering from depression. Patients suffering from depression commonly present multiple somatic symptoms, may be inappropriately investigated and treated for somatic disorders, and are at risk of suicide. Effective treatment can be provided at relatively low cost. The use of lithium salts in appropriate dosage has been shown to reduce recurrence rates in affective disorders.

Action at community level in other social sectors

Better day care for children

49. Retarded mental development and behaviour disorders among children growing up in families that are unable to provide appropriate stimulation can be minimized by early psychosocial stimulation of infants and by day care programmes of good quality, particularly if such programmes involve parents as participants (29). However, adequate quality of the day care programme is essential; "child minding" in crowded quarters with insufficient numbers of adult care-takers who are often inadequately trained may retard children's development, not facilitate it (30). Among useful measures that countries could take are surveys of existing day care facilities and an assessment of the need for them (particularly pressing in urban areas); establishment of quality standards and appropriate regulatory measures; setting of progressive targets for (a) assuring quality, and

(b) training staff in the psychosocial development and needs of children.

Better long-term care institutions

50. While the use of institutions for long-term care (e.g., hospitals, residential institutions, nursing homes) can be minimized by making alternatives available in the community, they will remain a necessary part of a full range of services. Whether they care for the young or the old or for the physically or the mentally handicapped, the quality of the institutional environment is a major determinant of the way the inhabitants function. Improvements of architectural design and the content of work programmes, and regular evaluations of the quality of long-term care institutions, present important opportunities for preventive interventions.

Self-help groups

51. These groups, organized by lay citizens, are effective in (a) reducing the chronicity of certain disorders (e.g., Alcoholics Anonymous); (b) reducing handicaps (e.g., societies organized to help patients with epilepsy); (c) educating the community about the nature of such disorders; and (d) playing an advocacy role and facilitating changes in legislation, better resource allocation, and satisfaction of other needs of groups of people with specific disorders. Furthermore, community self-organization for local development has been shown to reduce the psychopathology associated with alienation and helplessness (31).

Role of schools

52. The progressive extension of obligatory schooling in more countries provides new opportunities to broaden people's understanding of how they can protect their health. At the same time, it leads to the identification of child health problems not previously known to health authorities. Schools also often provide possibilities for preventive measures (32).

53. Teaching of parenting skills. A variety of risks to mental health and psychosocial development can result from the lack of parenting skills and from parents' insufficient knowledge of children's needs. Urbanization and other socioeconomic changes (e.g., small families do not offer children opportunities to exercise responsibility with younger siblings) may result in a growing number of young parents not having such skills. Therefore, education for parenthood may well have to become a

responsibility of public education. A number of possibilities for such education exist. Creches and nursery schools can, for example, be located next to secondary schools, whose students can be assigned to work in the nurseries under appropriate supervision and with appropriate classroom exercises. Trained lay group leaders for groups of new mothers (particularly adolescent mothers) to lead discussions on child rearing provide a valuable resource for self-help in the community.

54. Health education. Instruction about pre-marital counselling, family life, human sexuality, child development, nutrition, accident prevention and abuse of certain substances are among the subjects that are most frequently recommended for inclusion in school curricula. Evidence of the effectiveness and usefulness of such instruction is still incomplete and evaluation of programmes should be incorporated in their design. A particularly promising area of work is the new strategy to prevent abuse of certain substances among young adolescents by equipping them through group work to resist the ubiquitous solicitations to smoke cigarettes and consume drugs and alcohol.

55. The role of the teacher. With appropriate training, teachers can play an important role in identifying children (a) with sensory or motor handicaps, and (b) with mental health problems that have not been detected by the health sector. Collaboration between teacher, parent and health worker is central to the identification and rehabilitation of children with chronic handicaps and to the avoidance of their social isolation and other untoward consequences.

Preventing accidents and poisoning

56. In view of the high mortality and morbidity, in particular injury to the central nervous system, resulting from accidents and poisoning, measures for their prevention must have a high public health priority. Measures to prevent traffic accidents have been reviewed by WHO on several occasions. Brain damage through exposure to toxic substances at work can be prevented by imposing strict limits; untoward effects of shift work can be avoided using the principles of chronobiology; child-proof safety caps on medicine bottles and containers of household chemicals can reduce poison ingestion and consequent damage to the central nervous system (33); a ban on re-use of beverage bottles for pesticides and herbicides has been identified as a useful measure; and lead poisoning in children can be prevented by prohibiting paints containing lead for household use and by decreasing the lead content of gasoline to reduce blood lead levels and lead encephalopathy in children living in urban environments (34).

Role of the media

57. Radio, television, newspapers and comic strips have the potential to play a major role in public health education - for the better (e.g., by explaining why sanitation is essential for health) or for the worse (by advertising cigarettes or making smoking look glamorous because heroes and heroines in TV dramas smoke). Studies such as that in Northern Karelia (Finland) and the Stanford Tri-County Studies (USA) directed at changing smoking, exercise and eating habits have shown that public education campaigns can make a difference to health behaviour and consequently to health status. The capabilities of the media for the enhancement of health and the prevention of health-damaging behaviour and disease have however hardly begun to be exploited.

Cultural and religious influences

58. Cultural factors are among the principal determinants of human behaviour. Knowledge of cultural and religious influences can be utilized by health workers in their efforts to reduce health damaging modes of life (e.g., abuse of certain substances).

Collaboration with nongovernmental organizations

59. A productive alliance with nongovernmental organizations can help to educate the public and to supply care to the victims of disease (e.g., local, national, and international organizations concerned with mental health; Alcoholics Anonymous). Nongovernmental professional organizations can be an important factor in advocating preventive measures among their members and with governments.

Support services

60. Support services provided at the community level can enable families to care for members with chronic illnesses (e.g., schizophrenia, senile dementia), who would otherwise require more expensive and less satisfactory institutional care. An excellent example is the organization by the community, on the basis of voluntary efforts by retired workers, of "home beds" for chronically handicapped mental patients in China: the neighbourhood volunteers care for the patients while family members are away at work. To maintain residual function and to avoid institutionalization, chronic mental patients must be provided with housing, opportunities for sheltered employment, and recreation.

Action at the governmental level

61. An effective prevention programme will be possible only if there is commitment to such a programme by the national government and the provision of additional resources for this purpose. Such commitment must find its expression in a policy for the prevention and control of mental, neurological and psychosocial disorders, a policy which will be an identifiable part of the national health programme.

62. The implementation of the policy directives will require intersectoral cooperation and the formulation of at least medium-term programme plans developed on a realistic basis. These tasks should be entrusted to a coordinating group on mental health with the authority to lead the activity and to assign specified tasks to the appropriate sectors. Useful experience with such groups has already been obtained and clearly shows that this mechanism can be of crucial importance in programme development and evaluation.

63. In an area such as prevention, the work of the national coordinating group must be supported with appropriate information: it would therefore appear important to establish, at national level, an information centre or unit with the resources to collect and feed back data on changes in the nature and trends of problems and the effects of intervention and task performance. A comprehensive review of legislation affecting such matters as mental health, family life, health services, drug control and schools could be an early task of the centre. Such a review would assist the national coordinating group considerably in carrying out its work.

64. In the area of prevention, more so perhaps than in other health work, it is important to recall that government actions in spheres apparently remote from health may have implications for health that were not taken into account in their formulation: for example, housing projects that worsen mental health because of inappropriate design; industrial development projects that destroy local culture and lead to family disruption, child neglect and abuse of certain substances; or the widespread use of pesticides which, because of their neurotoxicity, can often lead to brain damage. This makes appropriate intersectoral cooperation, which can be supported by the intersectoral coordinating group, all the more vital.

IV. RESEARCH NEEDS

65. There is good reason to believe that the preventive measures described in section III, if applied, would lead to a reduction in the burden which mental, neurological and psychosocial problems place on health and socioeconomic development. It is therefore highly desirable to apply such measures without delay. It is also clear that there is a need for research into the causes and mechanisms of disease in order to develop new and better means for prevention and control; such research programmes have been proposed by WHO and are included in its medium-term mental health programmes.

66. Of immediate importance for action now are the applied research issues of direct relevance to the implementation of preventive programmes in each country. Though this report gives data on prevalence and on the effectiveness of interventions where they are available, such data frequently do not exist, particularly in developing countries or for subpopulations within countries. Extrapolation of existing data in country A to the needs of country B may prove entirely misleading. Therefore, it would seem important to foster research programmes of two kinds:

(1) studies of the distribution of problems in a specific population and changes in the pattern over time;

(2) investigations to enable Member States to assess the value - in their own conditions - of measures which have been proposed for wide-scale application.

67. Both types of study will have to be carried out at national or subnational level. At international level, an urgent task - which should be included in programmes of technical cooperation between countries - is the development of methods which countries will be able to use effectively in the conduct of such investigations. The past and current work of the Organization on the development of cross-culturally applicable assessment instruments, psychosocial indicators, and refined diagnostic criteria will greatly facilitate these efforts.

68. Such research requires an infrastructure in the countries: support to this infrastructure must therefore be given higher priority than is now the case.

69. Involvement of institutions in developing country in multi-centre research, research training courses and grants, more efficient information exchange and other recommended methods should all be used to create and strengthen the basis for further growth of knowledge in this field.

V. SUMMARY

70. Mental, neurological and psychosocial disorders constitute an enormous public health burden for both developing and developed nations. Review of the evidence demonstrates that the implementation of a comprehensive programme of prevention based on methods currently available could produce a substantial reduction of the suffering, of the destruction of human potential and of the economic loss they produce. Such a programme would attack both the biological and the social causes which underlie these disorders. For success, it requires national commitment and coordinated action in many social sectors.

71. The frequency of these disorders can be reduced, and their consequences for individuals and communities minimized, if, in addition to sustaining and enhancing programmes of prenatal and perinatal care, nutrition, immunization, family planning and accident prevention, countries undertake and emphasize the need for:

(1) Action that will prevent occurrence of mental, neurological and psychosocial disorders and impairment, including:

(i) Measures to reduce risk of social and cognitive failure by

(a) enriched day care for children (para. 49)

(b) better long-term care institutions (e.g., nursing homes) (para. 50)

(c) educating for parenthood (para. 53)

(d) introducing health education into school curricula (para. 54)

(ii) Measures to control abuse of certain substances as part of primary health care (paras 37 and 38) and of education in schools (para. 54)

(iii) Measures to reduce the health consequences of acute stress through crisis intervention in primary health care (para. 39)

(iv) Measures to prevent iatrogenic damage in primary health care by

(a) psychosocial interventions (para. 40) which could reduce excessive psychotropic drug use

(b) minimizing hospitalization (para. 41) by using community alternatives

(c) treatment of depression and infection in the elderly in order to prevent central nervous system damage and suicide (para. 42)

(2) Measures that will minimize chronic disability if impairment or disease occurs, including:

(i) Rehabilitation of patients with sensory and motor handicaps (paras 43 and 44)

(ii) Treatment of hypertension and central nervous system infection (para. 45)

(iii) Control of epilepsy and combating its stigma (para. 46)

(iv) Combined drug treatment and family care for patients with schizophrenia (para. 47)

(v) Recognition and treatment of depression (para. 48)

72. For full effectiveness, prevention programmes must involve self-help groups (para. 51), the media (para. 57), cultural and religious influences (para. 58), nongovernmental organizations (para. 59), and the provision of social support for families (para. 60).

73. At the government level (paras 61-64), the commitment to dealing with mental, neurological and psychosocial disorders must be made visible through the introduction of a mental health component into the national health and development policy. An intersectoral coordinating mechanism

should be established to assist in programme development. It should be able to acquire and distribute information on programme performance, have the authority to review national legislation with a view to recommending changes needed to bring it into conformity with policy, and develop agreement among social sectors on their responsibility for and contributions to the programme.

74. WHO, in addition to collaborating with countries in these efforts, should help to develop the research infrastructure necessary to study the magnitude and trends of problems and to monitor the impact of interventions or programmes.

REFERENCES

1. Mental retardation: Meeting the challenge Geneva, World Health Organization, 1985 (WHO Offset Publication No. 86).

2. Hetzel, B. & Orley, J. Correcting iodine deficiency: avoiding tragedy. World health forum, 6 (3): 260-261 (1985).

3. WHO Technical Report Series, No. 654, 1980 (Peripheral neuropathies: report of a WHO Study Group).

4. Jablensky, A. & Sartorius, N. Culture and schizophrenia, Psychological Medicine, 5, 113-124 (1975).

5. WHO Technical Report Series, No. 730, 1985 (Dementia in later life - research and action: report of a WHO Scientific Group).

6. WHO Technical Report Series, No. 665, 1981 (Neuronal aging and its implications in human neurological pathology: report of a WHO Study Group).

7. WHO Technical Report Series, No. 613, 1977 (Child mental health and psychosocial development, report of a WHO Expert Committee).

8. Report on Regional Workshop on Alcohol-Related Problems, Manila, Philippines, 8-12 August 1983 (unpublished WHO document (WP)MNH/ICP/MNH/004, 1984).

9. Walsh, B. & Grant, M. Public health implications of alcohol production and trade, Geneva, World Health Organization, 1985 (WHO Offset Publication No. 88).

10. Hughes, P. H. et al. Extent of drug abuse: An international review with implications for health planners. World health statistics quarterly, 36: 394-497 (1983).

11. Ghodse, A. H. & Khan, I. ed. Prescribing psychoactive drugs. Approaches to improve practices. Geneva, World Health Organization (in press).

12. The health consequences of smoking: Cancer, 1982; Cardiovascular disease, 1983; Chronic obstructive lung disease, 1984. Rockville, MD, United States Department of Health and Human Services.

13. Victims of violence: Proceedings of a WHO Working Group on the Psychosocial Consequences of Violence. Leidschendam, Netherlands Ministry of Health, Welfare and Cultural Affairs, 1983.

14. WHO Technical Report Series (in press). (Young people's health - a challenge for society: report of a WHO Study Group).

15. Harding, T. W. et al. Mental disorders in primary health care: a study of their frequency and diagnosis in four developing countries. Psychological medicine, 10: 231-241 (1980).

16. WHO Technical Report Series, No. 698, 1984 (Mental health care in developing countries: A critical appraisal of research findings: report of a WHO Study Group).

17. World Health Organization. Mental health and female sterilization. Report of a WHO prospective collaborative study. Journal of biosocial science, 16: 1-21 (1984); 17: 1-18 (1985).

18. Babor, T. F. et al. Alcohol-related problems in the primary health care setting: A review of early intervention strategies. British journal of addiction (in press).

19. Raphael, B. Preventive intervention with the recently bereaved. Archives of general psychiatry, 34: 450-454 (1977).

20. Windholz, M. J. et al. A review of research on conjugal bereavement. Comprehensive psychiatry, 26: 433-447 (1985).

21. Bloom, B. L. et al. A preventive intervention programme for the newly separated. American journal of orthopsychiatry, 55: 9-26 (1985).

22. Cooper, J. Crisis admission units and emergency psychiatric services, Copenhagen, World Health Organization, 1979 (Public Health in Europe, No 11).

23. Williamson, J. et al. Old people at home: their unreported needs. Lancet, 1: 1117-1120 (1964).

24. The provision of spectacles at low cost, Geneva, World Health Organization, 1987.

25. Robb, P. Epilepsy: A manual for health workers, Bethesda, MD, United States Department of Health and Human Services, 1981.

26. Wig, N. & Murthy, S. R. Manual of mental disorders for primary health care personnel, Chandigarh, Postgraduate Institute of Medical Education and Research, 1981.

27. Falloon, R. H. & Liberman, R. P. Interactions between drug and psychosocial therapy in schizophrenia, Schizophrenia bulletin, 9: 543-554 (1983).

28. Jablensky, A. et al. WHO Collaborative Study on Impairments and Disabilities associated with schizophrenic disorders, Acta psychiatrica scandinavica, 62, Suppl. 285: 152-163, (1980).

29. Berrueta Clement, J. et al. Changed lives: the effects of the Perry pre-school programme on youths through age 19, Ypsilanti, Michigan, High Scope Press, 1984.

30. Tizard, B. Evaluation of early stimulation programmes (unpublished WHO report, March 1985).

31. Eisenberg, C. Honduras: Mental health awareness changes a community. World health forum, 1, (1 & 2): 72-77 (1980).

32. Rutter, M. et al. Fifteen thousand hours: Secondary schools and their affects on children, Cambridge, Mass., Harvard University Press, 1979.

33. Walton, W. W. An evaluation of the Poison Prevention Packaging Act. Pediatrics, 69: 363-370 (1982).

34. Blood lead levels in U.S. population, Morbidity and mortality weekly report, 31: 132-133 (1982).

ANNEX

LIST OF INTERVENTIONS THAT CAN BE DIRECTED AGAINST EACH PROBLEM AREA
(Paragraph numbers in parentheses)

Problem	Intervention
Mental retardation (10)	Prenatal and perinatal care (32-33) Immunization (35) Family planning (36) Epilepsy control (46) Nutrition (34) Day care (49) Accident prevention (56) Family support (27) Teaching of parenting skills (53) Better long-term care institutions (50) Recognition and care of sensory and motor handicaps (43-44)
Acquired lesions of the central nervous system (11)	Treatment of hypertension and infection (45) Epilepsy control (46) Control of abuse of certain substances (37-38, 54) Accident prevention (56)
Peripheral neuropathy (12)	Accident prevention (56) Recognition and care of sensory and motor handicaps (43-44) Health education (54) Control of abuse of certain substances (37-38, 54)
Psychoses (13)	Treatment of depression (48) and schizophrenia (13, 47) Family support (27) Better long-term care institutions (50)

	Dementia control (14) Treatment of anxiety, depression and infection (42) Support services (60)
Epilepsy (15)	Prenatal and perinatal care (32-33) Immunization (35) Treatment (46) Accident prevention (56) Health education (54)
Emotional and conduct disorders (16)	Family planning (36) Health education (54) Role of teacher (55) Teaching of parenting skills (53) Day care (49) Primary health care (39)
Abuse of certain substances (17-22)	Primary health care (39) Prevention of iatrogeny (40-42) Health education (54)
Conditions of life that lead to disease (23-24)	Psychosocial care (40) Crisis intervention (39) Control of abuse of certain substances (37-38) Health education (54) Teaching of parenting skills (53)
Violence (25)	Accident prevention (56) Control of abuse of certain substances (37-38, 54) Health education (54) Teaching of parenting skills (53)
Excessive risk-taking behaviour in young people (26)	Health education (54) Support services (60) Teaching of parenting skills (53)

	Crisis intervention (39)
	Accident prevention (56)
Family breakdown (27)	Day care (49)
	Teaching of parenting skills (53)
	Support services (60)

Note: The role of the media (57), cultural and religious influences (58), nongovernmental organizations (59), and intersectoral collaboration and government action (60 and 61-64) apply in greater or lesser degree to all problems.