This report contains the collective views of an international group of experts and does not necessarily represent the decisions or the stated policy of the World Health Organization.

WORLD HEALTH ORGANIZATION

TECHNICAL REPORT SERIES

No. 275

PSYCHOSOMATIC DISORDERS

Thirteenth Report of the WHO Expert Committee on Mental Health

WORLD HEALTH ORGANIZATION

GENEVA

1964

WHO EXPERT COMMITTEE ON MENTAL HEALTH

Geneva, 22-28 October 1963

Members :

Dr H. Collomb, Professeur agrégé de Neuropsychiatrie, Université de Dakar, Senegal (*Vice-Chairman*)

Dr A. H. Leighton, Professor of Psychiatry (Social Psychiatry), Cornell University Medical College, New York, and Professor of Anthropology, Cornell University, Ithaca, N.Y., USA (*Rapporteur*)

Sir Aubrey Lewis, Professor of Psychiatry, University of London, England (*Chairman*)

Dr A. Mitscherlich, Professor of Psychosomatic Medicine, University of Heidelberg, Germany

Dr J. Rof Carballo, Director, Instituto de Estudios Psicosomáticos, Madrid, Spain

Dr C. A. Seguin, Profesor y Presidente, Departamento de Ciencias Psicológicas, Universidad Nacional Mayor de San Marco, Lima, Peru

Dr P. M. Yap, Head of the Division of Psychiatry, Department of Medicine, Hong Kong University Medical School, Hong Kong

Secretariat :

Dr P. A. H. Baan, Chief, Mental Health, WHO (*Secretary*)

Dr J. J. Groen, Professor of Medicine and Head, Department of Medicine A, The Hebrew-University-Hadassah Medical School, Jerusalem, Israel (*Consultant*)

Dr F. Reiser, Professor and Director of Research, Department of Psychiatry, Albert Einstein College of Medicine, Yeshiva University, New York, USA (*Consultant*)

PRINTED IN SWITZERLAND

Wld Hlth Org. techn. Rep. Ser., 1964, 275

PSYCHOSOMATIC DISORDERS

Thirteenth Report of the WHO Expert Committee on Mental Health

The WHO Expert Committee on Mental Health met in Geneva from 22 to 28 October 1963. The meeting was opened by Dr P. Dorolle, Deputy Director-General of the World Health Organization, on behalf of the Director-General. Professor Sir Aubrey Lewis was elected Chairman and Professor H. Collomb Vice-Chairman ; Professor A. Leighton was appointed Rapporteur.

1. INTRODUCTION

Although the term " psychosomatic disorders " has come into general use, there is at present little agreement on what it encompasses. It was therefore considered opportune to convene an Expert Committee on Mental Health with the objects of attempting to clarify the concept ; to evaluate present knowledge on etiology, treatment and prevention ; and to make recommendations.

Three in particular of the previous reports of the WHO Expert Committee on Mental Health deal with some aspects of the problems under discussion here. They are concerned with : the undergraduate teaching of psychiatry and mental health promotion [1] ; the role of public health officers and general practitioners in mental health care [2] ; and the training of psychiatrists.[3] The twelfth report of the WHO Expert Committee on Professional and Technical Education and Training of Medical and Auxiliary Personnel, which is concerned with the promotion of medical practitioners' interest in preventive medicine, was also considered highly relevant to the work of this Committee.[4]

---

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1961, **208**.
[2] *Wld Hlth Org. techn. Rep. Ser.*, 1962, **235**.
[3] *Wld Hlth Org. techn. Rep. Ser.*, 1963, **252**.
[4] *Wld Hlth Org. techn. Rep. Ser.*, 1964, **269**.

2. THE PSYCHOSOMATIC CONCEPT

2.1 Historical note [1]

In all ages and places men have expressed their feelings in bodily happenings and, through verbal and other symbols, in bodily as well as mental terms. The literature of the ancient world contains innumerable explicit statements about the somatic concomitants and effects of emotion : poets like the Psalmist, the author of the Book of Job, and Aeschylus give the matter poignant utterance ; medical writers like Susruta acknowledge it ; and Plato and Aristotle give it a philosophical form. Plato's dictum is unequivocal : " Any defect of psyche or soma is the occasion of the greatest discord and disproportion in the other." For many centuries, however, generalizations of this sort and descriptions of the familiar bodily manifestations of fear, sadness, anger and other transient and " normal " emotional states were unsupported by evidence of the ways in which emotion could be held accountable for the occurrence or the course and form of disease. Some speculations were offered, either unsystematically as by Paracelsus, or with reference to complex theoretical constructs like those of van Helmont or Stahl. But it was not until the advent of pathological studies, giving precision to the concept of somatic disease, that differential examination of the influence of psychological events began to be carried out.

The titles of relevant books show the way the wind was blowing in the eighteenth and nineteenth centuries. W. M. Falconer, in 1788, wrote a " Dissertation on the Influence of the Passions upon the Disorders of the Body " ; Tuke, in the course of his " Illustrations of the Influence of the Mind upon the Body in Health and Disease ", published in 1872, said : " Mind or brain influences, excites, perverts or depresses the sensory functions, muscular contraction, nutrition and secretion." A journal article by F. Nasse was published in 1822 under the title, " Grundzüge der Lehre von dem Verhältnis zwischen Seele und Leib in Gesundheit und Krankheit ". C. J. Tissot's book, *De l'influence des passions de l'âme dans les maladies et des moyens d'en corriger les mauvais effets*, appeared in 1798. In 1826 F. Voisin brought out a publication entitled *Des causes morales et physiques des maladies mentales et de quelques autres affections nerveuses*. In his volume, *Sketch of the Revolutions of Medical Science and Views Relating to its Reform*, P. J. G. Cabanis wrote, in 1806 : " The disordered or regular emotions of the mind have the same origin as the diseases or health of the body."

---

[1] This brief historical section merely provides an introduction to the ideas that are dealt with in the report and is not intended to be comprehensive or evaluative. The works and authors referred to were selected only as examples to develop the theme.

More precise studies of the physiological processes which might or might not be the prelude to lasting morbid changes on the structure or chemistry of the body were pursued in the nineteenth century. Although there was general acceptance of the role that worry, frustration and strain might have in hindering recovery or fostering illness of many sorts, there were no detailed analyses of the social and psychological influences which apparently had this effect or of the specified illnesses which could be thus affected and the mechanisms involved.

It is noteworthy that the two terms which can be used to designate this class of disorders were the outcome of a bitter polemic between those who insisted on the prepotency of psychological factors in mental disorder, like Heinroth who in 1818 introduced the term " psychosomatic ", and those who stressed the somatic pathology, like Jacobi who, in 1828, coined the term " somatopsychic ". These words connoted extreme views of etiology and served to hide the complexity of the relationship.

In this century the subject has been investigated experimentally in man and animals, and studies such as those of I. P. Pavlov, W. B. Cannon, and Wolff & Wolf furnished the kind of evidence which convinced sceptics of the accessibility of the relationship of body and mind to scientific as well as clinical scrutiny. The philosophical problem of the relationship persisted as the background to the ensuing studies, but the history of this theme suggests that experimenters and clinical investigators could with advantage leave it to the philosophers until much fuller information is gained about the psychological and physiopathological aspects of the doubtless unitary processes.

2.2 Psychosomatic medicine

" Psychosomatic medicine " and " psychosomatic disorders " are terms that have come into general use since the re-introduction of the word " psychosomatic " a few decades ago by Felix Deutsch, von Weizsäcker, Dunbar, Alexander, Stanley Cobb and others. These authors wished to stress that the conceptual separation of mind and body in medicine is not only unreal but also unfruitful in some conditions. They pointed out that, although great success had been achieved under the body-oriented approach characteristic of the past century in the field of infections and metabolic disorders, small advances had been made with diseases such as peptic ulcer, hypertension, and asthma. Although these disorders are somatic in their manifestation, many clinical observations seemed to indicate that psychogenic factors played an important role. By stressing that man, in health and disease, functions as a psychosomatic unit, these writers re-introduced a Hippocratic approach.

Today this view retains its place. The individual is conceived as a complex dynamic system in an unstable state of equilibrium, acting and

reacting to changes in the environment and to changes within the system. In disorder, that is, the disturbance of homeostasis, many aspects of the system are affected. When we speak of psychological processes and physiological processes, we are speaking of different ways of approaching one phenomenon. The phenomenon itself is not so divided. In this sense, then, there is neither psychogenic nor somatogenic disease, but only disease.

Such a holistic outlook is important for progress in medicine, especially at the present time when the profession is expanding on so many fronts. Although doctors often regard their work as limited to correcting organic defect by material means, it is evident that the profession as a whole is becoming increasingly involved in the problems of a changing world. Thus it affects and is affected by population increase, the needs of developing countries, mounting demands of society for service, and, especially, the growing sense that medicine should play a more vigorous part in the prevention of disease. Such demands require the physician to have an outlook that is broad enough to comprehend all the major factors involved in illness—social, cultural and psychological, as well as organic and hereditary.

2.3 Psychosomatic disorders

From all of this it is evident that the term " psychosomatic " as commonly used has two meanings : one when applied to the field of medicine, as just described, and another when applied to disorders such as hypertension, peptic ulcer and asthma in which psychological factors are supposed to play a major role. Consideration of these disorders raises challenging and controversial issues—issues of etiology and pathogenic mechanisms that stand at the frontiers of our knowledge of human life processes.

The main psychosomatic concepts focus on those specific phases of total psychobiological functioning in which events in the external or in the " internalized " environment evoke responsive brain processes that activate neuro-endocrine systems and thereby induce change in the functional state of " target " organs and motor systems. In other words, these concepts implicate psychological occurrences as participants in the pathogenesis of visceral disorders.

These psychosomatic sequences are conceived of as phases or processes in complex interactions between the brain and the rest of the body. It is postulated that even brief or intermittent events may exert profound effects upon the bodily state by modifying the major processes upon which they are superimposed ; or may play an important (but not necessarily dominant) role in the etiology of disorders, in conjunction with other factors, e.g., genetic and nutritional.

It is the personalized psychological implications and elaborated meanings of events that may render them stressful to a particular individual. Thus a wide variety of events may act as pathogenic forces because of their potential

capacity to influence physiological systems. At one extreme, for example, would be a major change in social environment (e.g., cultural shift or urbanization) and at the other extreme would be an intrapsychic shift such as a change in intensity of libido.

2.4 The psychosomatic paradox

A cogent question is where to draw the boundary of psychosomatic disorders. This brings out a contradiction in the two uses of the adjective " psychosomatic ". If the term is limited to certain disorders, the unitary approach to medicine is undermined, the mind-body dichotomy is reaffirmed, and a temptation is offered to neglect psychological factors in some disorders and somatic factors in others.

The Committee wished to draw attention to this paradox rather than attempt to solve it. It seems impracticable now to change terms that have become so firmly established. Moreover, extensive discussion has failed to evolve substitute terms that would be acceptable to a majority of workers in the field. What is needed is clarification of concepts and improved methods for investigating the biological and social mechanisms that integrate and unify all man's functions in living and coping with his environment.

Since there is probably a great range in the degree to which psychological and biographical factors are components in the etiology of various disorders, the question of where to place the dividing line between the more and the less psychogenic disorders (i.e., those which may be called psychosomatic and those which may not) should be determined by the purpose at hand. Thus, the cutting point might depend on whether the investigation concerned therapy, prevention, or research.

Workers in many different countries have tried to avoid the dichotomy by assuming that man is a biosocial organism more complicated than but not essentially different from other animal species that live in groups. According to such a concept the psyche is a subjective experience of certain functions of the central nervous system which, as the organizing principle of the integrated unity of the organism, can best be studied and understood by objective methods. Psychology and its associated sciences then include and depend upon neurobiology, and the term " psychosomatic " is equated with " neurovisceral ".

In contrast, other workers, while appreciating the operational fruitfulness of this approach, wish to go further. According to them, human emotions, motivations, and values, which play such a large role in man's normal functioning in his cultural environment, are also matter for scientific investigation.

The Committee emphasized that these seemingly opposed standpoints could be complementary. Important results have been produced by research workers from both " schools ".

3. ETIOLOGY OF PSYCHOSOMATIC DISORDERS

3.1 Stress and strain

Taking as a point of departure the view that causes are multiple in all forms of illness, the Committee noted that " stress " is a key concept in the etiology of psychosomatic disorders.

If the engineering model is followed, stress can be described as an environmental event capable of producing a reactive change in an organism, known as " strain ". Thus psychological stresses are events which produce their inner effects by way of the organism's perceptual apparatus.

The psychological stress of a given life situation can be understood only in relation to the viewpoint of the individual person, since the inner meaning it has for him is related to his past history and psychological development. It has been observed, however, that events involving loss of love, or separation, or which stimulate aggression often precipitate psychosomatic diseases. Interhuman relations constitute the events of greatest importance. This does not exclude, however, the possibility of stress arising through inanimate threats such as earthquakes and other physical disasters.

A bridging concept between the psychological and somatic spheres is *affect*, especially the type known as " anxiety ". This is manifested by a neurovegetative-endocrine motor response, by subjective perception of the somatic consequences of this discharge, and by a characteristic feeling of dread. Physiologically it makes no difference that the cognitive appraisal of " danger " is or may be inappropriate. It is the physiological and motor part of the total response that provides the mechanism for the somatic consequences.

The full development of anxiety may be prevented by psychological defences, but this usually reduces rather than eliminates the physiological events. As a result, considerable affect may be retained and may have pathogenic importance. The process can be regarded also in terms of inhibition, as when psychomotor and verbal expression of anxiety or hostile feelings is blocked so that discharges from the central nervous system become diverted into the autonomic system and hence lead to pathological changes in the visceral or vascular system.

Whatever the initiating process may be, it is thought that a repeated or continuous change in function may lead to alterations in tissues which ultimately become irreversible, e.g., a repeated or sustained tonus of renal arterioles resulting in their sclerosis.

3.2 Specificity

One of the most controversial questions is that of specificity. Is there a specific relationship between the nature of the psychological stress and

the particular organ system involved? Or does the psychological stress act in a non-specific fashion upon predisposed organs, whose vulnerability depends on such factors as genetic predisposition, infections, or prior conditioning?

There is a considerable body of data on this problem, both clinical and experimental, but the evidence is conflicting. While clinical impressions suggest that there is a specific relation between the psychological stress and the physical disorder that ensues, it is not clear how this comes about. Some prevailing ideas on the sequence of involvement may be summarized as follows:

(*a*) constitutional predisposition based on heredity;

(*b*) constitutional predisposition laid down as a result of early experience and development (both physiological and psychological experience, and the prenatal period as well as infancy, are included here);

(*c*) personality changes of later life that affect organ systems;

(*d*) the weakening of an organ, as by an injury or infection;

(*e*) the fact that an organ is in action at the moment of strain or emotional upheaval;

(*f*) the symbolic meaning of the organ in the personality system of the individual;

(*g*) organ-fixation as a result of arrested psychological development.

3.3 Evidence for theory

The evidence for the etiological assumptions that are widely held is far from clear. Much clinical, laboratory and animal research has investigated psychological stress in the etiology of essential hypertension, peptic ulcer, bronchial asthma, ulcerative colitis, thyrotoxicosis, neurodermatitis, coronary heart disease, migraine, diabetes mellitus and rheumatoid arthritis. The results, however, neither confirm nor refute the thesis of psychogenesis, although they do offer some evidence that can be considered plausible.

The first line of evidence derives from clinical studies of individual life histories which point to a relationship in time between the course of a patient's disease and the emotional vicissitudes of his life. Secondly, stress experiments on patients have been shown to reproduce the pathophysiological changes of disease. In essential hypertension, for example, it has been demonstrated by many workers that emotional stress may discharge through the autonomic and neural mechanisms, bringing about the intensifying of arteriolar constriction and the increased peripheral resistance that characterizes the pathological physiology of the condition. In this way stressful life situations may contribute to the onset of the disease, precipitate symptoms and complications, and even accelerate the process.

Such sequences do not, however, constitute pathogenesis in the ultimate etiological sense. What they do is to indicate that emotional stress can activate available hypertensive mechanisms, but as yet there is no evidence that this can go to the point of producing actual disease.

Study of the life situations which precipitate or aggravate diseases has demonstrated that these situations have specific emotional meaning for the individual patient by virtue of their relation to the experiences of his life and his unresolved conflicts; they are stressful for him because of these connexions.

Psychological tests carried out on patients and in appropriate control groups demonstrate significant differences in the personality of patients with various psychosomatic diseases and between "psychosomatic" and control patients, e.g., essential hypertension compared with peptic ulcer; chronic arteriosclerotic heart disease compared with chronic gall-bladder disease. Similarities also exist—and for the most part the differences lie mainly in the ways emotions and needs are handled, rather than in the character of the emotions and needs themselves. It is not clear, however, whether (and to what extent) these differences are the result of the disease or whether they contribute to it. Longitudinal studies will be required to answer this question. One such predictive study has been conducted successfully in connexion with peptic ulcer.

Comparative psychophysiological studies also support the assumption of contributory psychogenesis. Differential patterns of vegetative and neuro-endocrine accompaniments of emotion have been demonstrated in patients with different psychosomatic diseases and in healthy control subjects. These findings are controversial however, and according to some workers, individuals react uniformly to any type of stress. Further research is needed to clarify these issues, many of which doubtless depend on differences in methodology and on the theoretical frame of reference.

Experiments with animals have been carried out using the method of conflicting conditioning. Disturbances of cardiac and respiration rate and asthmatic wheezing have been observed when experimental neurosis has been induced in the animals; in one experiment a considerable increase in cardiac output was demonstrated. By other experimental behavioural methods ulcers of the stomach have been produced in rats and monkeys; the excretion of certain hormones was shown to be influenced by such procedures. Ulcers have also been produced by electrical stimulation of the hypothalamus; and as a result of the same procedure a considerable increase occurred in the extent of atherosis of the aorta in cholesterol-fed rabbits. "Inter-animal conflicts" produced vomiting in dogs, habitual abortion in golden hamsters, and adrenocortical exhaustion and death in rats.

In summary, then, the weight of experimental evidence clearly implicates psychological stress as a potent pathogenic influence. It is apparent that

there is a need in such research for close attention to problems of methodology and technique, and to appropriate formulation of the questions to which answers are sought in research laboratories.

4. RESEARCH

It is evident that the concept of psychosomatic disorders rests on inferences from multiple sources that carry considerable power of conviction. At the same time it is clear that there is a paucity of hard evidence with regard to specific details of process, and a lack of tested and established hypotheses. Such a situation places research in the forefront.

4.1 Experimental models

4.1.1 *Retrospective studies*

Studies of this kind in patients with syndromes such as ulcerative colitis, essential hypertension, peptic ulcer, thyrotoxicosis, anorexia nervosa, rheumatoid arthritis, bronchial asthma, neurodermatitis, and migraine have served mainly to develop hypotheses for later and more rigorous experimental test. They are primarily biographical and attempt to explore possible connexions between psychological events and medical events. Although subject to severe limitations, this approach provides advantages which argue strongly for its preservation. It allows freedom and scope for wide observation and full play of the investigator's imagination.

4.1.2 *Cross-sectional comparative studies*

In this work, groups of patients and healthy subjects are compared by matching experimental populations and controlling relevant variables. For example, a group of patients with peptic ulcer may be compared with a group who have chronic gall-bladder disease, to study the somatopsychic effects of chronic symptoms in the upper digestive tract. Epidemiological surveys may be conducted in which whole populations that contrast markedly in some relevant feature, such as culture or degree of exposure to stress, are compared with regard to the frequency and distribution of psychosomatic symptoms. Standard techniques are employed for gathering data so as to achieve maximum validity of comparisons. Such studies are particularly appropriate for testing, accepting, modifying or rejecting theories of specificity.

4.1.3 *Validation of comparative studies on new populations*

Studies in category 4.1.2 above will, depending on precision of technique, permit varying degrees of statistical analysis of the data. It remains

necessary, however, in a complex field where there are so many unidentified and uncontrolled intervening variables, to repeat the comparison on new groups of experimental subjects.

4.1.4 *Predictive studies*

When sufficient information about a particular disease has become available, it is possible to formulate hypotheses that are sufficiently precise to be tested experimentally. In studies dealing with human beings, the most appropriate model for testing psychosomatic hypotheses depends on longitudinal study and prediction. The hypotheses may be concerned with either long- or short-term predictions and may be of varying degrees of generality. On occasion, especially where it is a matter of predicting the effects of a given environment on a population, the studies are longitudinal in implication rather than in fact. That is to say, two populations may be studied more or less simultaneously to test for a predicted difference between them, which itself, however, will be based on evidence that some relevant process—e.g., cultural change—is more advanced in one population than the other. This type of short-cut is appropriate when the process of change takes too long to permit an actual longitudinal study of the same groups.

Predictions may concern :

(*a*) the individuals or groups who will develop a particular disease ;

(*b*) the psychosocial circumstances under which a disease will develop or be aggravated ;

(*c*) the psychosocial circumstances under which specified physiological changes may occur (e.g., alteration in secretion rate of adrenal hormones).

4.2 Techniques of observation and experiment

4.2.1 *The interview*

The techniques of this standard instrument for clinical psychological investigation vary from structured inquiry to non-directive psychoanalytic interviews.

4.2.2 *Psychological tests*

Psychological tests of all kinds from personality inventories to complex projective techniques have been applied in research on psychosomatic problems. Like the interview, they may be used in conjunction with physiological techniques. They yield data that can be systematically and statistically handled. In answering specific research questions many investigators have been especially successful with improvised new uses of established projective techniques, such as the Rorschach and TAT.

4.2.3 *Laboratory experiments in psychophysiology*

These clinical experiments with patients attempt to determine whether, and how, pathophysiological mechanisms that precede or accompany disease may follow or accompany experimentally induced affect. Such research may compare the " psychophysiological repertoire " of all healthy subjects who may be judged, on other criteria, vulnerable to a particular disorder (e.g., "pre-hypertensive ") with that of patients with a specific disease.

Detailed review of the various procedures that have been used in such experiments is beyond the scope of this report. The major methods of laboratory experiment can be summarized as follows :

(1) *Techniques for eliciting changes :*

(*a*) interviewing (directive, non-directive, and " stress " types) ;

(*b*) " staged " situations (e.g., role-playing) intended to elicit fear, rage, etc. ;

(*c*) performance tests of various types and of varying degrees of difficulty ;

(*d*) projective test stimuli, arranged in standardized sequences ;

(*e*) drugs ;

(*f*) films (stressful, relaxing, etc.) ;

(*g*) hypnosis ;

(*h*) classic and instrumental conditioning procedures ;

(*i*) small-group interaction ;

(*j*) exploration of sleep and dream periods ;

(*k*) utilization of spontaneous stresses of everyday life, by telemetering physiological changes ;

(*l*) sensory deprivation.

(2) *Observing, recording and evaluating the physiological aspects of the response*

Virtually every observable and measurable aspect of bodily function has been studied in a psychosomatic inquiry at some time or other. Discussion of problems in this area would go beyond the scope of this report.

(3) *Observing, recording and evaluating psychological aspects of response*

Since the subjective element in emotional responses is not fully accessible to the awareness of the subject, these responses are incompletely and inaccurately available to the experimenter, who is largely dependent on verbal communication with all its complexities and room for error. Techniques

which have contributed to progress in achieving greater objectivity and reliability include : use of several independent observers ; more explicit operational criteria for classifying responses ; instruments for visual and sound recording, as on electronic tape and film.

Objectivity can be greatly improved by asking observers to interpret and evaluate behavioural data without knowledge of the physiological information. This avoids prejudiced interpretation and can also be used to check the relevance and validity of psychological inferences.

Another technical device is the use of various types of objective self-scoring inventories such as adjective check-lists or mood scales. Promising methods are also available for linguistic analysis of recorded speech as a way of detecting affect, and methods are under development for scoring behavioural responses in the para-linguistic modes.

Despite such advances, many problems of observation and interpretation remain. Much still depends on the experimenter's theoretical bias and hence on the degrees of inference he considers important and permissible. Inference takes place at several different degrees of complexity and abstraction. It may be based on direct observation of physical phenomena or on a combination of theoretical assumptions (as when an Oedipus complex is inferred from behaviour). The type of inference has to be appropriate to the character of the problem under scrutiny. Considerable research is needed to determine what are the permissible degrees of inference for work in the psychophysiological field. This is relevant to the problem of inducing psychological stress. Often there is considerable discrepancy between the affect a manipulation is intended to provoke and the feeling that may actually be generated in the subject.

The psychological relationship between the experimenter and subject here constitutes a critical intervening variable which must be taken into account in interpreting the data.

(4) *Total interpretation of concomitant psychological and physiological events*

This comprehends the conceptual, logical and philosophical problems of interpreting data pertaining to the mind-body relation. These problems cannot be further developed in this brief survey.

4.2.4 *Utilization of " experiments of nature "*

Studies in this category take advantage of the naturally occurring situations that cause major emotional upset. For example, hypotheses concerning the psychological and physiological consequences of threat of separation through death have been studied in parents whose children were dying from leukaemia. Investigations have also been made on the effects of migration and of battle experiences on bodily illnesses.

4.2.5 *Epidemiology*

The epidemiological approach has its own quota of technical problems, different from but no less complex than those associated with clinical and laboratory studies. Thus if an investigator employs the records of patients admitted to psychiatric services, he can often count on a reasonable degree of correct assessment, but he will rarely have any clue as to the number of persons in the population with similar disorders who are never included in the medical record, and he will generally have insufficient information on social factors. He will also miss mild forms of disorder, and the category of healthy persons is apt to remain undefined. If a representative sample is taken (which can be a statistically selected sample or a whole community chosen as representing a larger society), all types of individual and disorder existing in that population will be covered in terms that are comparable. Numerous reliable correlations can then be made with social and cultural factors. The disadvantage is that information in depth is usually limited. Consequently diagnosis is impossible, and the results have to be expressed in terms of symptom prevalence. If " captive " groups are studied, such as are sometimes available in industry or in government or military services, it is frequently possible to investigate fairly thoroughly all persons with and without disorder, but assessment of social factors is generally limited to a particular environment which subsumes only one segment of each individual's life.

Apart from such general difficulties in epidemiological investigations, additional problems arise in the study of psychosomatic disorders. These are due to the lack of definition and the difficulty of distinguishing between instances of somatic disorder in which the psychological component is evidently a major factor and those in which it plays an indirect or minor role. In some conditions, such as asthma, ulcer or hypertension, the somatic element in the psychosomatic disorder may seem easy to detect. Yet here it is often difficult to distinguish between the presence and the absence of the somatic element. Furthermore, the comparative rarity of many of these conditions in the population creates a serious practical problem when it comes to examining enough people to achieve statistical reliability.

Often the best that can be done is to map the distribution of those symptoms which are commonly associated with psychosomatic disorders and correlate them with demographic and social factors. Work of this sort yields correlations which set up research targets and sometimes constitute evidence that makes one hypothesis look more plausible than another. Thus it has been found that psychoneurotic symptoms and psychosomatic symptoms tend to occur together in the same individual, suggesting that there is a general type of psychophysiological instability, rather than that a primarily somatic disorder is an alternative to a psychoneurotic disorder. It must be emphasized that correlations of this sort when taken by them-

selves do not establish hypotheses. Many surveys have to be done successively, and it must be shown repeatedly that a given condition precedes the emergence of another condition, all the circumstances being equal.

Cross-cultural studies constitute a particular kind of epidemiological investigation, with their own points of special interest and difficulty. Thus there are innumerable questions as to the meaning of words, both technical and popular, the meaning of values and the cultural context in which people live, and the meaning of the symptoms of which they complain. It is sometimes particularly difficult to keep separate in the research operations the distinction between the disorders and the social or interpersonal processes that are part of the environment. It is important to distinguish between (*a*) environmental stress and what occurs within the organism, and (*b*) the psychological processes within the organism and the reaction of physiological subsystems in the organism to that psychological strain. How to choose and measure the pertinent psychological and sociological aspects of culture that can be used for statistical correlation with the psychosomatic disorders and symptoms still requires clarification. It is only while doing the work that the actual magnitude of the difficulties becomes known to the investigator. The importance of this comparative knowledge is, however, so great as to make the effort worth while, even if the results have to be cast at a very approximate level. It throws light on the range and variation of psychosomatic symptoms and indicates the extent of those similarities that extend across cultural boundaries.

4.2.6 *Studies of hereditary tendencies*

Present knowledge of this most important aspect of psychosomatic medicine is grossly inadequate. As regards the " major " psychosomatoses —asthma, ulcer and hypertension—most studies have shown that they tend to occur with greater frequency among family members of patients with these disorders than among the families of patients with other diseases. The elucidation of the role of psychogenic factors in the etiology of these disorders makes it desirable to encompass in genetic studies not only the actual diseases but also various neuro-endocrine and central nervous system conditions which are reflected in psychoneurotic disorders and variations of temperament; the possible genetic relation of certain psychosomatic disorders to neuroticism, extraversion, and character anomalies also calls for study.

4.2.7 *Studies in developmental psychophysiology*

Much clinical evidence suggests that the psychological problems exhibited by patients with major psychosomatic diseases are of the types associated with severe difficulties of early development. The psychological roots of many adult disorders belong to infancy and early childhood. While all

theories of personality postulate wide variations in genetic and constitutional psychophysiological endowment, knowledge of developmental psychophysiology has had to await technical developments and is very meagre. The problems here are complex and include tactical and conceptual issues that make longitudinal research difficult. The conceptual models often used are spiral, and the developmental processes of maturation are now viewed as overlapping sequences. Experimental models have therefore to be evolved and tested before longitudinal research can proceed.

4.2.8 *Studies in therapeutic evaluation*

A large number of patients with psychosomatic disturbances have been treated by different forms of psychotherapy, but few psychotherapeutic studies have been carried out in such a way that the result could be statistically evaluated by comparison with suitable control groups. Although there are many methodological pitfalls, such studies can use the fluctuation of the somatic syndrome as a measure of change. This is a great advantage where instruments exist that permit exact functional or structural recordings.

The application of psychopharmacological agents to psychosomatic research has received practically no systematic investigation, although it offers opportunities for clarifying psychophysiological mechanisms. Many drugs at present used in the treatment of psychosomatic disorders have a central, an autonomic nervous and a visceral point of attack, so that it is not clear how the therapeutic effect is achieved and why it sometimes fails. This is the case with the effects of the rauwolfia alkaloids in hypertension, the antihistamines in urticaria, and the steroids in asthma and ulcerative colitis. Studies could be usefully directed towards clarification of these points.

It might also prove feasible to set up studies on the therapeutic effects of the doctor-patient relationship. Investigation should be made also of other topics concerning the application of treatment, such as criteria for deciding when cases should be treated by the family doctor and when by the specialist ; the best way of treating acute phases ; and criteria for choosing among various forms of service, such as outpatient clinics, day or night hospitals, or inpatient hospitals.

4.2.9 *Animal studies*

Studies on animals allow for experimental precision and for the utilization of technical devices that cannot be used in human subjects.

The classical Pavlovian technique of setting up conflict has been used for decades to produce "neuroses" in experimental animals (see page 10). New lines of investigation are opening up through advances in neurophysiology and neuro-endocrinology, which make it possible to carry out

critical manipulations of the nervous system, to obtain recordings of electrical phenomena associated with brain function, and to assay hormones in physiological quantities of blood and urine. It is possible to stimulate by wireless transmission implanted electrodes in the brain and to record by the same techniques central nervous and visceral system events in free-ranging animals. Thus social and visceral behaviour can be added as features of central nervous function in animal experiments. Experimental lesions of the gastro-intestinal tract have been induced inadvertently in primates by intense conditioning stress and deliberately in the cat by hypothalamic stimulation. Animal studies also permit controlled manipulation of genetic endowment and of early life experience.

5. TREATMENT AND PREVENTION

Most of what can be advocated with assurance regarding treatment and prevention pertains to the psychosomatic view of medicine rather than psychosomatic disorders as such. In virtually all forms of medicine it is desirable to be aware of the social and psychological events that commonly give rise to illness, precipitate states of disequilibrium and impairment, and contribute to maintaining the disorder. Such awareness can be an aid in plotting the strategies of treatment and in the development of programmes concerned with preventing illness and promoting health.

So far as the psychosomatic disorders are concerned, there are no specifics for either treatment or prevention. There are, however, in the general armamentarium of psychiatry and in the applied social sciences a number of procedures which have particular bearing on these disorders. The present section will be concerned with discussing and illustrating some of these.

5.1 Treatment

In the majority of cases, treatment of psychosomatic disorders will be conducted by the non-psychiatric physician—whether he be general practitioner, internist, paediatrician or other specialist—because other skills are required in addition to psychiatry and because there are not, nor are there ever likely to be, enough psychiatrists to take care of all such cases. The psychiatrist's role is more that of providing training and diagnostic and therapeutic consultation and, in particular cases, carrying out specialized psychotherapy.

A number of general principles may be summarized. Thus, the doctor-patient relationship constitutes the emotional interpersonal matrix within which treatment is conducted, and this matrix often decisively colours the therapeutic meaning to the patient of whatever is said or done. In view

of this, it is particularly important that the doctor's goals for the treatment be realistic : goals set too high may lead eventually to tension and frustration in both physician and patient and ultimately contribute to deterioration of the relationship between them.

The possible goals range from symptom relief and emotional support to comprehensive reintegration of psychophysiological equilibrium, constituting cure through basic reconstruction of personality. In most instances it is found wise to aim at intermediate goals—more than symptom relief, but less than total " cure ". That is to say, an attempt can be made to improve the functional capacity of the patient and to prevent recurrences, exacerbations and complications. With this in view, knowledge of variables such as the following is often helpful in the choice of goal : (1) the present status of the functional and structural changes in the patient ; (2) the nature of his personality and the character of his conflicts ; (3) the environmental stresses and family situation ; and (4) the role, attitudes and perceptions of the physician with regard to this complex.

The physician should be prepared to find that the release of the patient from psychosomatic symptoms may in some instances precipitate symptoms in another member of the family. This is because the patient, together with his disorder and its manifestations, is often a component in an essentially pathological type of equilibrium that is being maintained by his group. When he changes, the group equilibrium is necessarily affected, and new patterns of adjustment must be found by the members before a steady state is again achieved.

Insight into the patient's personality and situation is the key to good management by the physician. This is not to say that this insight should be communicated directly to the patient in whole or in part, but rather that it should serve as a guide to the physician and give him a frame of reference in which to interpret events and construct his expectations. Such insight can be furthered by training in psychiatric concepts and calls for some effort to understand the patient biographically and psychologically. This must, of course, be within the limits that can be set by the physician, and it does not involve the deeper layers of the personality.

The patient is often helped by being led into discussion of feelings such as those engendered by frustration, envy and guilt. Finding that there is no suggestion of censure when he expresses these feelings to the physician may act as a corrective experience and lead to improvement in his handling of such feelings, so that he may express himself more freely and appropriately and be less troubled by tension and anxiety.

The type of psychotherapy that can be employed is necessarily tied to the values and attitudes, especially concerning healing and the role of the doctor, that prevail in the culture. Some indigenous forms of psychotherapy different from those currently used in western societies should be considered for application to psychosomatic cases. Chi-Kung therapy, for instance,

of Chinese origin, from which autogenic training is derived, has been found effective. Likewise, Morita therapy appears to have been successfully employed in Japan. Psychotherapeutic elements may be cloaked in religious ceremonial, as in some African communities. Where psychoanalysis is available, the non-psychiatric physician can learn to select individuals liable to respond to such therapy, the final decision for its application lying with the specialist.

Where it is possible to secure the cooperation of all the physicians concerned in treatment—e.g., family doctor, internist, paediatrician or other specialist—psychotherapy is likely to show more effective results.

The use of tranquillizers and sedatives is appropriate. The indications, however, lie in the emotional symptoms, signs of tension and sleep disorder manifested by the patient.

A common principle in the treatment of psychosomatic disorders practised in certain countries is the use of general measures of physiological and psychological hygiene as a corrective to the somatic symptoms. The theoretical basis of this system of treatment relies on concepts of the relations between neurovegetative processes and cortical functions, especially those related to inhibitory mechanisms in the brain. Here methods of rest, regulation of work periods, occupational therapy, hydrotherapy, hypnosis and the specific application of sleep therapy—pharmacologically induced sleep—are combined, together with systematic convalescent treatment and amelioration of stressful social and work situations in the patient's life.

Some therapists place much reliance on group methods of treatment, especially the concomitant treatment of spouses, and on the psychotherapy of groups composed of several families, punctuated by periods of individual psychotherapy.

5.2 Prevention

The section of this report devoted to etiology suggests the areas to which preventive measures might be applied. These may be summarized under the following headings :

(*a*) heredity and constitution ;

(*b*) social and cultural context ;

(*c*) life story—that is to say, the sequence of experiences (especially interpersonal) and their cumulative effect ;

(*d*) factors in the immediate situation precipitating and maintaining the illness.

The problem of prevention is like the problem of where to apply a lever : since complex dynamic systems in equilibrium are involved, intervention at any point can be expected to have some effect. Not all points, however, have equal promise, and of those that have promise, not all are feasible.

With reference to items (*b*) and (*d*) above, it may be assumed that all the general measures of hygiene and preventive medicine apply to the psychosomatic disorders. This obtains whether emphasis is laid on preventing the disease from occurring at all, on early treatment and eradication before serious damage has occurred, or on reducing degree of impairment.

Measures aimed at achieving such control soon lead outside the field of medicine. Rapid social change, industrialization, automation, disintegration, and cultural change, to name a few, are the context and are factors in benign and noxious family situations and in other benign and noxious life experiences. The medical profession is a part of the world's changing society and cannot maintain a withdrawn or passive position. Furthermore, to the extent that there is a field of preventive medicine, there is already involvement with the problems that confront the educator, economist, applied social scientist, administrator and others engaged in the promotion of human welfare. Very often when planning is being done, whether in developing or developed areas, there is an opportunity for preventive medicine, inseparable from which is the prevention of psychosomatic disorder.

Attempts to intervene in specific types of life events in order to prevent psychosomatic disorder later on are best cast in terms of pilot studies and research. Such ideas as are current or are inviting in this regard are better considered promising leads, rather than a basis for public programmes designed to change people's behaviour through education or other means.

It is important to point out, however, that there are such leads. A number of studies suggest that what happens during the neonatal period may have profound psychological and physiological consequences later on. In some groups in Africa the child is laid immediately after birth on the mother's abdomen, and mother and child are thereafter treated as a unit. It is of interest to note that pyloric spasm is apparently rare in these African babies as compared with those in Europe and North America. Study of the relation between age and conditions of weaning and subsequent development of disorders may reveal possible preventive measures. Further investigations are required on whether early detection and treatment can, in fact, reduce the duration and severity of psychosomatic disorders such as asthma.

At a more general level, the stress model discussed in the section on concepts suggests opportunities for pilot studies. In the present changing world, particularly with the shifting of cultural patterns, many communities are undergoing varying degrees of disintegration and disorganization, with consequent severe difficulties for the members. Studies might be conducted to see whether change can be effected without such disintegration and, if so, whether this has a preventive effect on disorder, including psychosomatic disorder.

Other populations at risk, such as certain occupational groups in which ulcers or coronary heart disease are common, might similarly be subjected to experimental measures aimed at prevention and then followed for a sufficient period for evaluation of results.

6. EDUCATION AND TRAINING

The task of training must again be considered from the two orientations that have run throughout this report—" psychosomatic medicine " on the one hand, and on the other, a limited group of diseases to which the term " psychosomatic disorders " is commonly applied. In what follows the broad view will be considered first, and thereafter the question of training for dealing with the disorders.

6.1 Education and training in general practice

Inasmuch as the psychosomatic orientation applies to all phases of medicine, training in this regard should begin with the undergraduate medical curriculum, followed by further work in graduate years. The undergraduate teaching of psychiatry and mental health promotion is considered at length in the ninth report of the WHO Expert Committee on Mental Health.[1] The sections on the teaching of neurology and the biological sciences in relation to psychiatry and on the teaching of medical psychology and sociology are considered particularly pertinent in the context of the present report. Although the topic is too large for discussion in detail here, a few points may be made.

(1) Teaching of behavioural sciences in the preclinical years has in many centres been greatly facilitated by regular small-group discussions of lectures and assigned reading. Membership of such groups gives practical experience in interpersonal relations and promotes emotional acceptance of the topics as suitable for discussion.

(2) The impact upon the student is greatest when the clinical teachers have themselves achieved successful and sober integration of the psychological point of view into their own approach to patients. Conversely, the effects of even the best preclinical behavioural science courses can be seriously damaged by negative attitudes in influential clinical figures.

(3) The clinical aspects of psychosomatic medicine are best taught in the non-psychiatric areas of the hospital with host departments carrying the primary responsibility and utilizing psychiatrists as consultant teachers and participants.

---

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1961, **208**.

(4) Training for clinical work must aim at developing a proper attitude in the student as well as imparting content and technique. This is an area moderately supplied with opinions but virtually devoid of facts. For example, a high frequency of neurosis has been reported among medical students. Is this a matter for active intervention, or is it rather a reaction to their situation, requiring time for spontaneous adjustment? Perhaps much of what the students are taught and shown only later bears fruit when they have become more mature. Medical students are generally at a stage of their lives when their own personal experience is limited and when they are for the first time being repeatedly and unguardedly exposed to the raw facts of the human condition—birth, death, mutilation, disease, etc. Clearly they will benefit from suitable opportunities for discussing these problems with fellow students and mature teachers. It would seem, too, that they need the experience of direct, psychologically oriented work with patients, under close supportive guidance and supervision. The Committee considers that research should be devoted to evaluation of such approaches and practices.

(5) This report will not discuss postgraduate training for the general practitioner, since this topic has been covered in detail in the eleventh report of the WHO Expert Committee on Mental Health, which discusses the role of public health officers and general practitioners in mental health care.[1] The principles elucidated there were considered by the Committee to be directly applicable to the topic of this report.

(6) The orientation towards fully integrated psychosomatic medicine has important implications for nursing education. The hospital nurse in the direct care of patients will be well aware, from her early experience, of the interaction between the psychological and the somatic and their essential unity, but her training—especially in basic courses and refresher courses—should offer some precise information on these topics. The nursing care of children and that of nursing mothers are important fields of application of psychosomatic principles. Certain psychosomatic disorders, e.g., those involving the alimentary system, that are serious enough to bring the patient into hospital demand the most careful handling. The nurse's education in these matters will require augmentation by discussions of specific patients by the whole team involved in their therapy—physician, psychiatrist and nurse.

In order to induce public health nurses to play their part in the early detection and correct referral of patients with psychosomatic disorders, attention should be given in nurses' training to these diseases and to the ways in which the nurse can take part in experimental measures of prevention.

---

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1962, **235**.

6.2 Education and training for specialization in psychosomatic disorders

The most important point to emphasize under this heading is that the teaching should be rigorous, as recommended in the twelfth report of the WHO Expert Committee on Mental Health, which states :

" This subject requires to be taught by someone who has had a thorough training in internal medicine and in psychiatry (particularly in psychodynamics). Alternatively, it should be taught by a physician and a psychiatrist working in collaboration. Emphasis should be placed on experimental studies that have brought some precision to certain limited areas in this wide field." [1]

In no branch of medicine is it more plainly indicated that critical thinking and close reliance on the data of controlled clinical observation and experiment are essential. Since the borders that demarcate psychological from somatic pathology, structure from function, causation from concomitance or unrelated priority, are arbitrary and provisional, the graduate student must be taught to distrust both the concept of psychogenesis and the crude concepts of physiogenesis. The chief requirement in training is a thorough grounding in internal medicine and in psychiatry. Mastery of techniques, though indispensable, takes second place to a grasp of the fundamentals of behavioural science, physiology and pathology.

Special attention should also be given to training for research with regard to these disorders. Up to now, workers have to a large extent been finding their own way, and it is only in the last few years that formally designated training fellowship programmes have been initiated. These are not confined to psychosomatic topics but constitute broader training programmes for research in psychiatry, behavioural science and the nervous system. The general remarks which follow, therefore, concern this wider area of training.

The central issues here arise from the multidisciplinary nature of the approach required. How should training programmes set their goals ? There are two broad alternatives : to train single persons fully competent in more than one discipline and capable of carrying sole responsibility for interdisciplinary research ; or to train scientists each in the field of his choice according to the highest standards and methods extant, and to add to their programmes a common core designed to acquaint all trainees with the basic concepts and methods of the other disciplines concerned with problems of the nervous system and behaviour. The goal of such programmes would be to train a particular kind of informed scientist—informed to the point where he can collaborate productively in the conception, design and execution of cooperative interdisciplinary research.

The Committee considered that training of both types is required. Matters of content, methods, curricula, requirements, conferring of degrees,

---

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1963, **252**, p. 20.

etc., should be left open for careful experimentation. It is too early to know which are the most efficient and productive directions. The problem is particularly difficult because it concerns different clinical as well as pre-clinical disciplines. It is proper at this stage to experiment with different plans of clinical and research training according to the interests, resources and opinions of each training centre.

7. RECOMMENDATIONS

7.1 Extending and developing the psychosomatic point of view

While recognizing the paradox implied in current uses of the term " psychosomatic " (see section 2.4), the Committee wished to emphasize how important it was, in the advance towards comprehensive or holistic medicine, to develop the psychosomatic approach. To this end, the Committee recommended :

(*a*) that schools of medicine, public health, and nursing re-examine their curricula closely with full attention to the psychosomatic approach in education and training ;

(*b*) that suitable centres be set up to provide further education for teachers who are specialists in various branches of medicine, so that they may broaden their knowledge and skills along lines suitable for developing the psychosomatic approach in their teaching ;

(*c*) that a group of psychiatrists, neurophysiologists, other physicians and behavioural scientists be convened under the auspices of WHO, for the purpose of improving understanding of psychosomatic medicine among those engaged in different disciplines. Among their first tasks might be the analysis of areas of misinformation and confusion, and agreement as to terms and definitions that would be useful in teaching and research.

7.2 Research

Because of the severe limitations of knowledge on etiology, treatment and prevention of psychosomatic disorders, as well as training in this field, the weight of the Committee's recommendations necessarily fell on research. Although the choice of research problems is usually a matter for the individual and it is generally not profitable for an Expert Committee such as this to map out research tasks for others, experience indicates that those who have reviewed a field may perform a useful task in pointing to areas of research which they believe require emphasis.

A review of the models and techniques given in section 4 illustrates the nature of the research that appears possible. In this connexion the Committee wished to refer again to the psychosomatic concept of medicine and to state that these models and techniques have applicability to the study of all forms of disease wherever there may be an opening for coming to grips with social and psychological factors in causation. Of equal importance is research into the psychological and social consequences of disorders which are thought to be mainly organic in their origin, or in which the organic component of a complex is the one most commonly noted. Some endocrine disorders are in this category, as well as biochemical disturbances such as porphyria, phenylketonuria and certain other metabolic disorders, chronic intoxications and brain disorders.

It is apparent from section 5 that methods of treatment and prevention of sufficient power to command full confidence are still lacking. There is no comparable dearth of ideas about etiology. This suggests that considerable research effort should be devoted to the investigation of treatment and the comparative testing of different practices. Similarly, efforts at prevention should, whenever possible, take the form of pilot studies with careful plans for evaluating and comparing results. Related to this is the importance of utilizing the wide variety of cultural conditions prevailing in the world today. Cultural and situational differences permit study of numerous "experiments of nature", in which groups of people are subject to varying conditions of life, including stress. These offer opportunities for testing hypotheses by prediction and comparison, and these opportunities should be seized, for they dwindle year by year.

The Committee noted that the focus of interest in psychosomatic research appeared to be shifting from clinical and anamnestic studies towards basic psychophysiological research. Rather than concentrate on psychosomatic correlations in specific diseases, many workers now recommend that greater knowledge concerning the general laws of psychophysiology be acquired from observations and experiments with adults and from longitudinal studies of the developing child. Classical physiology was based largely on the study of physiological processes in artificial isolation from the human environment and from the mind. The Committee emphasized that, in addition, broader physiological studies were required, paying due regard to the human environment and to the broad spectrum of affects.

Among the specific topics considered in section 4, the Committee recommended that early attention be paid to the following:

(1) Epidemiological studies, including recognition and description of psychosomatic patterns in various cultures, establishment of criteria for their identification, and mapping of their distribution and other demographic and cultural correlations. Attempts should be made to discover the relationship of measurable psychological and social variables of psychosomatic diseases (see section 4.2.5).

(2) Studies of different forms and applications of treatment (see section 4.2.8).

(3) Application of psychopharmacological agents to psychosomatic research (see section 4.2.8).

(4) Predictive studies incorporated in discrete preventive projects (see section 4.1.4 and 5.2).

(5) Experimental studies on approaches to education and training in psychosomatic medicine and psychosomatic disorders. These should be considered in the light of the requirements of different groups (undergraduate medical, house officers, specialists, general practitioners, nurses and research workers) and in the light of the cultural context (see section 6.1 and 6.2).

7.2.1 *Development of research units in medical schools*

The Committee considered that specialized facilities for clinical research should be developed that would focus on specified medical conditions in which psychological factors are thought to play a major role. Studies of this kind should include continued clinical exploration of the natural history of the disorder as well as highly technical and specific investigations of relevant physiological and metabolic mechanisms. The administration of such facilities would vary according to the local situation, but they should have the clinical, laboratory, personnel and financial resources and the possibilities of independence necessary to carry out their work.

7.2.2 *Psychosocial factors in specific diseases*

The Committee recommended that WHO consider the feasibility of convening joint meetings between specialized units of the Organization to continue investigation of psychosocial factors in diseases which are widespread in certain countries.[1]

---

[1] See, for example, the first report of the Expert Committee on Cardiovascular Diseases and Hypertension, *Wld Hlth Org. techn. Rep. Ser.*, 1959, **168**, p. 23, para 5.

WORLD HEALTH ORGANIZATION
TECHNICAL REPORT SERIES

Recent reports :	Price s.d.	$	Sw.fr.
No.			
256 (1963) **The Care of Well Children in Day-Care Centres and Institutions** Report of a Joint UN/WHO Expert Committee convened with the participation of FAO, ILO and UNICEF (34 pages)	3/6	0.60	2.—
257 (1963) **Training of the Physician for Family Practice** Eleventh report of the Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel (39 pages)	3/6	0.60	2.—
258 (1963) **Expert Committee on Medical Assessment of Nutritional Status** Report (67 pages)	5/-	1.00	3.—
259 (1963) **Expert Committee on Biological Standardization** Fifteenth report (60 pages)	3/6	0.60	2.—
260 (1963) **The Public Health Aspects of the Use of Antibiotics in Food and Feedstuffs** Report of an Expert Committee (30 pages)	1/9	0.30	1.—
261 (1963) **Expert Committee on Health Statistics** Eighth report (34 pages)	3/6	0.60	2.—
262 (1963) **Expert Committee on Gonococcal Infections** First report (70 pages)	5/-	1.00	3.—
263 (1963) **Measles Vaccines** Report of a WHO Scientific Group (37 pages)	3/6	0.60	2.—
264 (1963) **Second Joint FAO/WHO Conference on Food Additives** Report (12 pages)	2/6	0.50	1.50
265 (1963) **Insecticide Resistance and Vector Control** Thirteenth report of the WHO Expert Committee on Insecticides (227 pages)	12/-	2.25	7.—
266 (1963) **Social Aspects in the Teaching of Obstetrics and Gynaecology** Fourth report of the WHO Expert Committee on Maternal and Child Health (22 pages)	1/9	0.30	1.—
267 (1964) **General Practice** Report of a WHO Expert Committee (24 pages)	1/9	0.30	1.—
268 (1964) **Genetics of Vectors and Insecticide Resistance** Report of a WHO Scientific Group (39 pages)	3/6	0.60	2.—
269 (1964) **Promotion of Medical Practitioners' Interest in Preventive Medicine** Twelfth report of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel (22 pages)	1/9	0.30	1.—
270 (1964) **Rehabilitation of Patients with Cardiovascular Diseases** Report of a WHO Expert Committee (46 pages)	3/6	0.60	2.—
271 (1964) **Atmospheric Pollutants** Report of a WHO Expert Committee (18 pages)	1/9	0.30	1.—
272 (1964) **WHO Expert Committee on Malaria** Tenth report (52 pages)	3/6	0.60	2.—
273 (1964) **WHO Expert Committee on Addiction-Producing Drugs** Thirteenth report (20 pages)	1/9	0.30	1.—