

2. that sales promotion of drugs by the pharmaceutical companies exerts the greatest influence upon general practitioner prescribing and that the official sources of therapeutic data (eg, the Department of Health and Social Security, university departments, the Pharmaceutical Society) have a marginal influence in comparison.

Finally, in addition to medical training and drug sales promotion, there are many other factors which influence the general practitioner in his attitudes towards drug therapy. Amongst these are the processes of socialization and professionalization which the young general practitioner undergoes as he moves through his medical training and out into general practice. These are the various agencies amongst which he finds himself at certain identifiable stages in his career. For example, during his pre-registration hospital appointments he learns from other members of the unit on which he works, particularly senior colleagues and nursing staff. During his early years in general practice he comes under the influence of general-practitioner colleagues, consultant colleagues, medical representatives, nurses, patients, and pharmacists. Agencies of continuing influence are consultant colleagues and medical representatives. Medical literature (official and unofficial) and sales promotion of drugs have a continuing effect upon his prescribing throughout his career. His prescribing behaviour is finally determined by the effect of all these influences and the attitudes he develops towards them and towards drug therapy.

## SECTION IV

### OVERVIEW

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### OVERVIEW

The prescribing of psychotropic drugs has increased by about four per cent per annum since 1965. Non-barbiturate hypnotics show the greatest percentage increase in annual prescribing of around 20 per cent, followed by antidepressants (13 per cent) and tranquillizers (10 per cent). About four in five of the 47·2 million psychotropic drug prescriptions dispensed under the National Health Service in England and Wales in 1970 were for hypno-sedatives or tranquillizers. This indicates that depression of the central nervous system is a major therapeutic aim in contemporary therapeutics. In order to produce this effect, general practitioners are prescribing increasingly costly and complex chemicals, most of them introduced over the past five to ten years. For example, the increase in psychotropic drug prescribing over the second half of the last decade can be directly related to the increased prescribing of four such drugs:

Librium (chlordiazepoxide)—introduced in 1960

Valium (diazepam)—introduced in 1963

Mogadon (nitrazepam)—introduced in 1965

Mandrax (methaqualone and diphenhydramine)—introduced in 1965

In 1970 4·8 million prescriptions for Librium were dispensed in England alone, 4·3 million for Valium, 2·5 million for Mogadon and 2·3 million for Mandrax. This means that nearly one in three psychotropic drug prescriptions dispensed in 1970 were for these four drugs. Three of them, Librium, Valium, and Mogadon are benzodiazepines, possess similar pharmacological profiles and are manufactured by the same company. Mandrax is manufactured by a different company and marketed as a non-barbiturate hypnotic.

To try to explain these phenomenal prescribing rates it is necessary to take a look at hypnotic drug prescribing in recent years. Towards the end of the sixties barbiturates came under criticism because of the number of reported cases of accidental and self-poisoning. Public and professional concern was also aroused by reported cases of barbiturate addiction which was given maximum coverage by the news media (despite the fact that these barbiturate addicts numbered no more than 200–300 and were mainly concentrated in London (DHSS 1971)). This adverse publicity on the barbiturates led to an increased interest in non-barbiturates. Mandrax was launched in 1965 and in 1968 became the most widely prescribed hypnotic. Mogadon also introduced in 1965 overtook Mandrax in 1969 to become the most widely prescribed of all hypnotics in 1970. The promotional literature of both drugs draws attention to long-term barbiturate treatment despite the fact that Mandrax is a known drug of dependence and Mogadon is a benzodiazepine (a group of drugs known occasionally to produce dependence). Sales literature available on Mandrax contains the statement, "After long-term use of barbiturates, rehabilitation of a patient's sleep/wakefulness rhythm may take some days. The full efficacy of Mandrax in such patients may only develop after continuing medication". Does the replacement of one hypnotic drug by another represent "rehabilitation of a patient's sleep/wakefulness rhythm?"

Sales literature on Mogadon similarly discusses long-term barbiturate treatment, "In converting patients from high dose or prolonged barbiturate therapy to Mogadon there may be a few disturbed nights . . . barbiturate administration should be gradually reduced during the initial 10-day period on Mogadon therapy". There is no mention of subsequently reducing or stopping Mogadon therapy.

In examining the high prescribing of Mandrax, a weekly consumption in England of about 2 million tablets, it is important to note that it shares most of the disadvantages of the barbiturate hypnotics (hangover, potentiation of the actions of alcohol, risk of dependence) but also possesses additional hazards such as very rapid onset of action in some patients, abuse by teenagers, and coma from overdose may be complicated by convulsions. Most authoritative pharmacological opinion is against the combination of drugs into one product and is also against the exploitation of the soporific side effects of antihistamine drugs for the purposes of producing sleep. Mandrax is such a combination; it combines a non-barbiturate hypnotic, methaqualone, known to potentiate the action of alcohol and to produce drug dependence of the barbiturate alcohol type, with an antihistamine-diphenhydramine. The antihistamines cause CNS depression in low doses but can cause CNS excitation in high doses so that the combination of diphenhydramine with methaqualone in Mandrax can cause convulsions when an overdose is taken. In view of these hazards it is difficult to explain the popularity of this drug. What then do the 2·3 million prescriptions for Mandrax issued in 1970 indicate? Do they reflect an unawareness of the drug's hazards by the prescribing general practitioners? More likely they reflect that the powerful influence of advertising has persuaded general practitioners to prescribe non-barbiturates as if this in itself had merit.

The phenomenal sales of Mogadon as a 'sleep inducer' also raise important questions. It is a benzodiazepine like Librium and Valium which are used mainly as anti-anxiety drugs. 11·6 million prescriptions for Librium, Valium, and Mogadon were dispensed in 1970 (about one in four of all psychotropic drug prescriptions). It must therefore be asked whether it is appropriate therapy to prescribe drugs with similar effects and side-effects on such a phenomenal scale for the treatment of a condition which is often difficult to define—*anxiety*? There is no doubt that the safety of Mogadon when an overdose is taken has been emphasized in its promotion as an hypnotic and this has undoubtedly played a major part in increasing its prescribing. Whether this warrants the prescribing of 2·5 million prescriptions is however debatable. It is not easy to explain the increased prescribing of Librium, Valium, Mandrax and Mogadon without inferring that sales promotion must have played a major rôle. It is equally difficult to determine

whether anxiety and insomnia have increased to anywhere near the extent indicated by the prescribing of these anti-anxiety and hypnotic drugs. Certainly there has been no increase in reported psychiatric morbidity from general practice.

If the increased use of antidepressant drugs (1 in 12 of all psychotropic drug prescriptions) is added to the increased use of CNS depressant drugs it must be concluded that general practitioners are using an increasing amount of psychotropic drug therapy in their management of patients with mental symptoms and disorders, particularly anxiety and depressive disorders. There is much confusion however in recognizing and defining anxiety and depression; further, the number of products launched onto the market for the treatment of these disorders is equally confusing. For example, nine new antidepressant and anti-anxiety drugs have been introduced in the past year, three of them in the past three months. The claims of the manufacturers for each of these drugs add to this confusion:

*Anafranil* (clomipramine)

The international antidepressant . . . new, potent, tricyclic antidepressant.

*Integrin* (oxypertine)

Now—a “fundamental” treatment for anxiety unlike the tranquillo-sedatives, Integrin acts on the basic biochemical disturbance associated with anxiety.

*Nobrium* (medazepam)

Towards true precision in the control of excessive anxiety.

*Noveril* (dibenzepin)

Simplify the treatment of depression with Noveril, a new antidepressant.

*Prothiaden* (dothiepin)

Prothiaden can mean trouble-free treatment of anxiety, depression, in fact any manifestation of emotional distress.

*Sinequen* (doxepin)

Treats anxiety and depression occurring singly or together.

*Tacitin* (benzocetamine)

In a world of worry, tension needs Tacitin—the first of a completely new group of psychoactive drugs.

It is of interest to note that although general practitioners have at their disposal a vast therapeutic arsenal, the effects that these drugs produce in their patients are both limited and constant—CNS depression and stimulation. To produce these effects general practitioners have a wide choice of drugs and yet examination of prescribing habits indicate that their actual selection is often restricted to only three or four popular drugs from each therapeutic sub-group and these patterns of selection are displayed both locally and nationally. There must therefore be widespread pressures influencing their prescribing of these products. Recognized efficacy must dictate the use of most drugs; however, evaluation of a drug's efficacy in general practice is often subjective so that no matter how objective the original clinical assessment of a particular drug, when it is launched into general practice, it succeeds or fails on value judgements strengthened by the various influences involved in drug promotion. It is therefore reasonable to hypothesize that sales promotion exercises the greatest influence upon general practitioners to prescribe a particular drug. The drug companies are the main source of therapeutic information and are responsible for the diffusion of their information to the prescribing doctor. As stated previously these channels of information are overloaded, particularly if the official sources of therapeutic information are also considered. With such a torrent of information pouring onto him the general practitioner can cope only by having details of a particular drug and its effects brought clearly to his notice. To do this requires all the skills of contemporary marketing so it is not unreasonable to suspect that official sources of therapeutic information cannot compete. However, is it necessary for official sources of therapeutic information to compete with unofficial sources? Is it necessary to identify one source as official and one as unofficial? All official sources rely upon the manufacturers of drugs to supply them with information about a particular drug. For

example most drug trials are sponsored; authors of monographs for official sources (eg, *BPC Codex*) obtain details and references from manufacturers as do authors of articles in official journals (eg, *Prescribers' Journal*). In their attempts to influence the cost of prescribing the Department of Health and Social Security appear not to have been too successful when the high prescribing of new and proprietary drugs is considered. However, any good influences on prescribing for which the Department's medical officers are responsible cannot be measured and it ought to be encouraged in its recent improved efforts at therapeutic education.

If general practitioners' prescribing were responsible and appropriate then would costs fall? Responsible and appropriate prescribing can only be promoted by a system of continuous therapeutic education. It is therefore necessary that the medical schools, the DHSS and other authorities take a careful look at the present undergraduate and postgraduate teaching of pharmacology and therapeutics. There is need for students to receive instruction in, for example, the evaluation of drug advertising, the assessment of reports of clinical trials, in simple medical statistics. They need contact with and instruction on, the pharmaceutical industry and its methods of marketing and sales promotion; the rôle of the DHSS and its regional medical officers, the retail pharmacist and his rôle in the pharmaceutical services. In addition to obvious teaching about a drug's actions, uses and effects, there is need for special instruction on adverse effects and drug interactions. Further, if the student is to be trained for a life-time in medical practice he must be taught an approach to drug therapy in the same way that he is taught clinical diagnosis. He must develop a routine method of drug selection and use; he must be taught to attach as much interest, enthusiasm and importance to his drug treatment of a patient as he attaches to his diagnoses. Unless this is attempted, the young graduate will continue to be influenced by immediate colleagues during his hospital appointments and on entering general practice he will have forgotten most of the basic principles of therapeutics and will soon become a victim of the media.

Of equal importance to undergraduate education in therapeutics is the need to develop an ongoing system of postgraduate education which will give guidance to the prescribing doctor on the indications for drug therapy, selection of the appropriate drug and the optimal duration of therapy in addition to instruction in drug use and misuse, drug effects and side-effects and required reactions and adverse reactions. The aim of such education would be to encourage responsible and appropriate drug therapy.

Drugs should not be prescribed without sufficient indication for their use, they should be prescribed in appropriate doses to provide maximal therapeutic response with minimal side effects and for an optimal length of time. The prescribing of any drug demands that the prescriber should be acquainted with the hazards and contra-indications of such treatment particularly now more than ever before, because of the increasing incidence of iatrogenic drug reactions, drug interactions and complexities of formulations. Appropriate therapy requires that the doctor prescribe the most appropriate drug and dosage regime for the treatment of a particular disorder in a particular patient, in a particular social situation at a particular time. This implies that response to drug therapy can vary within the individual and between individuals and that such a response is affected by the situation in which the drug is prescribed and taken.

In prescribing complex and costly drugs it ought to be expected that the prescribing general practitioner would exercise care and control over the amount of drugs issued and the frequency of issue, particularly with psychotropic drugs all of which must be regarded as drugs of dependence. However the findings of the present survey and others (Balint *et al* 1970, Dunnell 1971) suggest otherwise. These studies indicate a relationship between long-term drug taking (more than one year) and prescribing of psychotropic drugs particularly the barbiturates (although from the present prescribing trends of non-

barbiturate and minor tranquillizers there may well be a shift to these drugs in the not too distant future). These studies also show that as duration of drug-taking increases the obtaining of repeat prescriptions by indirect means also increases.

Some practices fail to keep any sort of record of prescriptions issued and further, many more practices do not keep records of repeat prescriptions issued. The present survey found that the completeness of prescription data entries was poor despite the fact that the participating general practitioners had indicated that they kept careful records of their prescribing. The ease with which general practitioners prescribe psychotropic drugs needs examining, particularly the practice of allowing repeat psychotropic drug prescriptions to be obtained indirectly (*via* the post, telephone, ancillary staff, friends or neighbours). This must surely encourage the misuse and abuse of these drugs by patients. Although it apparently eases the work-load of the general practitioner it removes from him the opportunity to observe his patients, and therefore any signs of adverse reactions in his patients must go unobserved. General practitioners have encouraged patients to obtain repeat prescriptions by indirect methods and in many surgeries notices can be seen giving instructions to patients on how to obtain repeat prescriptions. In taking drugs of dependence patients will seldom complain of pleasant effects—the patient on hypnotics will not admit to sleeping well, she will just ask for a repeat prescription; similarly the obese housewife on slimming tablets will not admit to increased energy—she will try to obtain a further supply by an indirect method if possible.

The encouragement of repeat prescription routines reflects an indifference towards duration of therapy. It is essential that patients on maintenance therapy with anti-psychotic and antidepressant drugs should take their drug as directed. In these patients, in whom cessation of therapy could lead to breakdown and re-admission to a psychiatric unit, the prescribing doctor should see them at reasonable intervals to make sure they are taking their treatment correctly and also to take the opportunity to look for adverse effects. However, there are many patients on long-term hypno-sedatives and minor tranquillizers, the value of which must be questioned. It is not for one moment suggested that the many bereaved widows who are readjusted socially and who take 100 mg–200 mg of a barbiturate at night should have their supply of hypnotics suddenly cut off, but what is suggested is that there should be more care when starting such therapy, and further that there should be as much attention given to the decision to continue or stop treatment as should be given to diagnosis and commencement of therapy. Unfortunately, information on the optimal duration of psychotropic drug therapy is sadly lacking; general practitioners are supplied with much information on the ‘indications’ for such therapy but given no guide on when to stop therapy.

There is obviously need for more sociopsychological research into these problems. Yet as Sargent (1967) suggests:

Even if we think that many of the millions of sufferers from anxiety all over the world should preferably be treated on analytic couches, by individual psychotherapy, in therapeutic groups, by the alteration of what is so often an unalterable environment, it is by the use of drugs and other simple and practical physical treatment methods that the vast majority are actually going to have to be treated in practice.

But the increasing prescribing of CNS depressant drugs suggests that general practitioners are blanketing their patients’ emotional reactions to an excessive degree and they must ask themselves whether it is right for them to produce a pharmacological leucotomy on contemporary society?

The present survey found that the taking of psychotropic drugs rises rapidly from the age of 18 years to 25 years for both sexes, the proportions taking these drugs continue to increase with advancing age through to about the period of the menopause in women which then levels off to increase again after about the age of 65 years. In men the trend shows a linear increase right through to 75 years of age and over. It may be hypothesized that many of these patients are more doctor dependent than patients who do not attend

their doctor for similar disorders. If this is so then it may be further hypothesized that these patients feel the need for support and therefore they are the patients who are more likely to become psychologically dependent upon the taking of drugs. This hypothesis is supported by the evidence from the present survey and others (Dunnell 1971, Balint 1970, Woodcock 1970, Parry 1968) which suggest that increasing proportions of the population are becoming long-term psychotropic drug takers. If, therefore, the increased prescribing rates of these drugs reflect an increase in the number of long-term drug-takers then this would be extremely significant since this could be related to the extent of iatrogenic drug dependence in society. As discussed previously such evidence cannot be obtained from studies of prescribing rates and patterns; what are required are longitudinal studies of prescribing which must include patient-treatment related morbidity surveys. Until such ongoing research is instituted the suggestion that iatrogenic drug dependence is on the increase remains as a grave warning but only as a hypothesis.

There can be no conclusions to a report such as this, but only questions. For example, does sales promotion by the pharmaceutical companies exert the greatest influence upon prescribing in general practice and is the general practitioner merely a victim of the media? What will be the future effects of alterations in sales promotion towards the provision of 'educational' services and concept selling? Should these pressures be counter-balanced and if so what should be the content and presentation of undergraduate and postgraduate teaching in therapeutics? What should be the future rôle of the DHSS and the medical schools? Is the medical representative the main therapeutic educator in general practice and if so ought the rôle of the regional medical officers to become more educative? Is prescribing in general practice responsible and appropriate or is it permissive? What ought to be done about the issuing of prescriptions without direct contact between patient and doctor? Does ease of obtaining repeat prescriptions for drugs of dependence lead to misuse and abuse? What factors influence a general practitioner's attitudes towards mental disorders and their treatment? The questions are numerous but only by research into the epidemiology of psychiatric disorders and treatment can it possibly be hoped to identify some of these problems. Only by identifying such problems can action be planned and only by action can it be hoped to improve treatment. Further unless it is determined what influences general practitioners in their choice of treatment and sources of knowledge it will remain difficult to know what are the best means of informing him.

However, attitudes and expectations of doctors and patients towards drug therapy and the way that patients and doctors interact with each other and society will affect the way that prescribed drugs act both on the patient and upon the way that patient interacts with society. The act of drug prescribing and drug taking must therefore be viewed as social acts within a social framework and therefore any future research into prescribing must include sociological studies if it is hoped to identify and subsequently correct any of the faults in prescribing behaviour which exist today.

## APPENDIX I

### PROPRIETARY AND NON-PROPRIETARY DRUG NAMES

It is customary in reports of this nature to refer to drugs by their non-proprietary (generic) names. However, in this study only ten per cent of psychotropic drug prescriptions issued by the survey general practitioners were for non-proprietary preparations. Because of this and because the prescribing figures for England and Wales show a marked predominance of proprietary prescriptions it was decided to refer to drugs by their proprietary names when necessary. The proprietary and non-proprietary names (in brackets) of the psychotropic drugs mentioned in the text are listed below:

*Non-barbiturate hypnotics*

Doriden—(Glutethimide)  
 Mandrax—(Methaqualone 250 mg—diphenhydramine 25 mg)  
 Melsedin—(Methaqualone)  
 Mogadon—(Nitrazepam)  
 Welldorm—(Dichloralphenazone)

*Barbiturate hypnotics*

Nembutal—(Pentobarbitone sodium)  
 Seconal Sodium—(Quinalbarbitone Sodium)  
 Sodium Amytal—(Amylobarbitone sodium)  
 Sonalgin—(Butobarbitone 60 mg—codeine phosphate 10 mg—phenacetin 225 mg)  
 Soneryl—(Butobarbitone)  
 Tuinal—(Quinalbarbitone sodium 50 mg—amylobarbitone sodium 50 mg); (Quinalbarbitone sodium 100 mg—amylobarbitone sodium 100 mg)

*Tranquillizers*

Amytal—(Amylobarbitone)  
 Beplete—(Phenobarbitone + B vitamins)  
 Equanil—(Meprobamate)  
 Fentazin—(Perphenazine)  
 Largactil—(Chlorpromazine)  
 Librium—(Chlordiazepoxide)  
 Melleril—(Thioridazine)  
 Sparine—(Promazine)  
 Stelazine—(Trifluoperazine)  
 Serenid D—(Oxazepam)  
 Valium—(Diazepam)

*Stimulants and appetite suppressants*

Apisate—(Diethylpropion)  
 Dexedrine—(Dexamphetamine)  
 Durophet—(Laevo and Dextroamphetamine—Ratio 1 to 3)  
 Durophet M—(Laevo and Dextroamphetamine—Ratio 1 to 3—12.5 mg—methaqualone 40 mg)  
 Filon—(Phenmetrazine 30 mg—Phenbutrazate 20 mg)  
 Ponderax—(Fenfluramine)  
 Preludin—(Phenmetrazine)  
 Tenuate—(Diethylpropion)

*Antidepressants*

Aventyl—(Nortriptyline)  
 Concordin—(Protriptyline)  
 Marplan—(Isocarboxazid)  
 Nardil—(Phenelzine)  
 Niamid—(Nialamide)  
 Parnate—(Tranlycypromine)  
 Parstelin—(Tranlycypromine 10 mg—trifluoperazine 1 mg)  
 Surmontil—(Trimipramine)  
 Tofranil—(Imipramine)  
 Tofranil—Promazine—(Imipramine 25 mg—Promazine 50 mg)  
 Triptafen—(Amitriptyline—perphenazine)  
 Tryptizol—(Amitriptyline)

## APPENDIX II

## DEFINITIONS OF DRUG DEPENDENCE

The following four definitions, formulated by the WHO Expert Committee on Drug Dependence, have been adopted in this publication.

*Drug*: Any substance that, when taken into the living organism, may modify one or more of its functions.

*Drug abuse*: Persistent or sporadic excessive drug use inconsistent with or unrelated to acceptable medical practice.

*Drug dependence*: A state, psychic and sometimes also physical, resulting from the interaction between a living organism and a drug, characterized by a behavioural and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence. Tolerance may or may not be present. A person may be dependent on more than one drug.

For the purposes of greater clarity the following additional descriptions are offered. (Isbell, H., Chrusciel, T. L. (1970). Dependence liability of "non-narcotic" drugs. Supplement to Vol. 43 of the Bulletin of the World Health Organization, 1970.)

*Psychic dependence*: A compulsion that requires periodic or continuous administration of a drug to produce pleasure or avoid discomfort. This compulsion is the most powerful factor in chronic intoxication with psychotropic drugs, and with certain types of drugs may be the only factor involved in the perpetuation of abuse even in the case of most intense craving. Psychic dependence, therefore, is the universal characteristic of drug dependence. Operationally, it is recognized by the fact that the dependent continues to take the drug in spite of conscious admission that it is causing harm to his health and to his social and familial adjustment, and that he takes great risks to obtain and maintain his supply of the drug.

*Physical dependence*: A pathological state brought about by repeated administration of a drug and that leads to the appearance of a characteristic and specific group of symptoms, termed an abstinence syndrome, when the administration of the drug is discontinued or—in the case of certain drugs—significantly reduced. In order to prevent the appearance of an abstinence syndrome the continuous taking of the drug is required. Physical dependence is a powerful factor in reinforcing psychic dependence upon continuing drug use or in relapse to drug use after withdrawal.

*Tolerance*: The state in which repetition of the same dose of a drug has progressively less effect, or in which the dose needs to be increased to obtain the same degree of pharmacological effect as was caused by the original dose.

*It should be borne in mind that the fact that a substance is termed a drug of dependence does not necessarily mean that it should be controlled, nationally or internationally, and, in addition, listing a substance as a drug of dependence does not indicate the type or degree of control which should be applied to a particular substance. The need for and the degree of control must be determined individually for each substance and must be based on the degree of risk to public health and the usefulness of the drug in medical practice.*



## REFERENCES

- Adams, B. G., Horder, E. J., Modell, M., Steen, C. A., Wigg, J. W. (1966). "Patients Receiving Barbiturates in an Urban General Practice." *Journal of the College of General Practitioners*, **12**, 24.
- Balint, M., Hunt, J., Joyce, D., Marinker, M., Woodcock, J. (1970). *Treatment or Diagnosis. A Study of Repeat Prescriptions in General Practice*. London. Tavistock Publications. J. B. Lippincott Co.
- Bauer, R. A., and Wortzel, L. H. (1966). Doctors' Choice: The Physician and his Sources of Information about Drugs. *Journal of Marketing Research*, Vol. 3 (Feb. 1966), p. 40.
- Benjamin, B., Ash, R. (1964). *Prescribing Information and Management of the NHS Pharmaceutical Services*. HMSO. London.
- Blum, R. H. (1968). *Psychopharmacology—Dimension and Perspectives*. Edited by Joyce, C. R. B. Mind and Medicine Monographs. Tavistock Publications.
- British Medical Association. (1968). *Working Party Report on Amphetamine Preparations*.
- Cartwright, A. (1967). *Patients and their Doctors. A Study of General Practice*. Routledge & Kegan Paul.
- Connell, P. H. (1968). *Amphetamine Psychosis*. Maudsley Monographs No. 5.
- Connell, P. H. (1968). The Use and Abuse of Amphetamines. *Practitioner*, **200**, 234.
- Chief Medical Officer of Health. *Ministry of Health Circular to General Practitioners*. March 1968.
- Cooper, B. (1965). A Study of 100 Chronic Psychiatric Patients Identified in General Practice. *British Journal of Psychiatry*, **111**, 595.
- Crombie, D. L. (1957). The Prevalence of Psychogenic Illness in General Practice. College of General Practitioners, *Research Newsletter*, **4**, 218.
- Daly, R. J., Kane, F. J., and Ewing, J. A. (1967). Psychosis Associated with the Use of a Sequential Oral Contraceptive. *Lancet*, 196.
- Davidoff, E., and Reifentine, E. C. (1937). The Stimulating Action of Bezedrine Sulfate. *J. Amer. Med. Ass.*, **108**, 1770.
- Davies, S. W. V. (1958). A Year in General Practice. *Journal of the College of General Practitioners*, **1**, 315.
- Department of Health and Social Security. (1969). *Annual Report of the Department of Health for the Year 1968*. HMSO. London.
- Department of Health and Social Security. (1970). *Annual Report of the Department of Health for the Year 1969*. HMSO. London.
- Department of Health and Social Security. (1971). Personal communication.
- Department of Health and Social Security and Welsh Office. (1970). *An Enquiry into prescribing costs in Caernarvonshire*. Welsh Office. Cardiff.
- Doll, R. (1964). Discussion on Paper by Benjamin and Ash, *Prescribing Information and Management of the NHS Pharmaceutical Services*. HMSO. London.
- Draper, P. (1964). See Lee, J. A. H., Weatherall, M., Draper, P.
- Dunlop, D. M., Henderson, T. L., and Inch R. S. (1952). A survey of 17,301 Prescriptions on Form EC.10. *British Medical Journal*, 292.
- Dunlop, D. M., Inch, R. S., Paul, J. (1953). A Survey of Prescribing in Scotland in 1951. *British Medical Journal*, 694.
- Dunnell, K. (1971). Medicine Takers and Prescribers. (In press).
- Fry, J. (1957). Five Years of General Practice. A Study in Simple Epidemiology. *British Medical Journal*, 1453.
- Geddes, G. L. (1971). Personal communication.
- Goodman, L. S., Gilman, A. (1966). *The Pharmacological Basis of Therapeutics*. (3rd edition) Collier-Macmillan. London.
- Grant, E. C. G., and Mears, E. (1967). Mental Effects of Oral Contraceptives. *Lancet*, 946.
- Gray, P. G., and Cartwright, A. (1954). Who gets the medicine? *Applied Statistics*, Vol. III, No. 1.
- Handfield-Jones, R. P. C. (1959). One year's work in a country practice. *Journal of the College of General Practitioners*, **2**, 323.
- Hewetson, J. C., McEwan, J. A., and Ollendorff, R. H. V. (1963). The Incidence of Psychiatric Disorders in General Practice. *The Practitioner*, Vol. 190, p. 127.
- Hollingshead, A. B., Redlick, F. C. (1958). *Social Class and Mental Illness*. Wiley. New York.
- Hollister, L. E. (1969). Clinical Use of Psycho-Therapeutic Drugs Current Statistics. *Clinical Pharmacology of Therapeutics*, **10**, 2, 170.

- Hopkins, P. (1955). *The General Practitioner and the Psychosomatic Approach*. Modern Trends in Psychosomatic Medicine. London.
- Horner, J., Horner, E. (1954). Illness in General Practice. *Practitioner*, **173**, 177.
- Howard, C. R. G. (1959). The Problem of Defining the Extent of Morbidity in General Practice. *Journal of the College of General Practitioners*, **1**, 119.
- Jefferys, M., Brotherston, J. H., and Cartwright, A. (1960). Consumption of Medicine on a Working Class Housing Estate. *British Journal of Preventive and Social Medicine*, **14**, 64.
- Johns, M. W., Egan, P., Gay, T. J. A., and Masterton, J. P. (1970). Sleep Habits and Symptoms in Male Medical and Surgical Patients. *British Medical Journal*, 509.
- Johnson, J., and Clift, A. D. (1968). Dependence on Hypnotic Drugs in General Practice. *British Medical Journal*, **4**, 613.
- Johnson, J., and Milner, G. (1966). Amphetamine intoxication and dependence in admissions to a psychiatric unit. *British Journal of Psychiatry*, **112**, 617.
- Joyce, C. R. B., Last, J. M., and Weatherall, M. (1968). Personal Factors as a Cause of Differences in Prescribing by General Practitioners. *British Journal of Preventive and Social Medicine*, **22**, 170.
- Kaye, B. M. (1963). Oral Contraceptives and Depression. *Journal of American Medical Association*, 522.
- Kendall, R. E. (1968). *The Classification of Depressive Illnesses*. Institute of Psychiatry, Maudsley Monographs 18. Oxford University Press.
- Kessel, N. (1963). Who Ought to see a Psychiatrist? *Lancet*, **1**, 1092.
- Kessell, W. I. N. (1960). Psychiatric Morbidity in a London General Practice. *British Journal of Preventive and Social Medicine*, **14**, 16.
- Kessell, W. I. N., and Shepherd, M. (1962). Neurosis in Hospital and General Practice. *Journal of Mental Science*, **108**, 199.
- Klerman, G. (1960). Staff Attitudes, Decision Making and the Use of Drug Therapy in the Mental Hospital—quoted by Blum (1968) in Psychopharmacology *Dimensions and Perspectives*. (Ed. C. R. B. Joyce). Mind and Medicine Monographs. Tavistock Publications.
- Koos, E. L. (1955). 'Metropolis'—What City People think of their Medical Services. *American Journal of Public Health*, **45**, 1551.
- Last, J. M. (1963). The Iceberg. 'Completing the Clinical Picture' in General Practice. *Lancet*, 28.
- Lee, J. A. H., Weatherall, M., and Draper, P. (1964). Prescribing and other aspects of General Practice in Three Towns. *Proceedings of the Royal Society of Medicine*, **57**, 1041.
- Lemere, F. (1966). The Danger of Amphetamine Dependency. *American Journal of Psychiatry*, **123**, 5, 569.
- Lewis, A., and Hoghughi. (1969). An Evaluation of Depression as a Side-Effect of Oral Contraceptives. *Br. J. Psychiat.*, **115**, 697.
- Logan, W. P. D. (1953). *General Practitioners' Records: An Analysis of the clinical records of eight practices during the period April 1951 to March 1952*. Studies on Medical and Population Subjects. No. 12. HMSO. London.
- Logan, W. P. D., and Cushion, A. A. (1958). *Morbidity Statistics from General Practice*, Vol. 1 (General) Studies on Medical and Population Subjects. No. 14. HMSO. London.
- McGhie, A., and Russell, S. M. (1962). The Subjective Assessment of Normal Sleep Patterns. *Journal Mental Sciences*, **108**, 642.
- Martin, F. M., Brotherston, J. H. F., and Chave, S. P. W. (1957). Incidence of Neurosis in a New Housing Estate. *British Journal of Preventive and Social Medicine*, **11**, 196.
- Martin, J. P. (1957). *Social Aspects of Prescribing*. W. Heinemann Ltd.
- Ministry of Health. *Recent National Health Service Prescribing Trends* (1964). Reports on Public Health and Medical Subjects. No. 110. HMSO. London.
- Monroe, R. R., and Drell, H. J. (1947). Oral Use of Stimulants obtained from Inhalers. *Journal of American Medical Association*, **135**, 909.
- Monthly Index of Medical Specialities*. Haymarket Press Ltd.
- Moos, R. H. (1968). Psychological Aspects of Oral Contraceptives. *Archives of General Psychiatry*, **19**, 87.
- Mowbray, R. M., Blair, W., Jubbs, L. G. and Clarke, A. (1961). The General Practitioners' Attitude to Psychiatry. *Scottish Medical Journal*, **6**, 314.
- Naess, K. (1966). *Medical Responsibility and Drug Therapy*. World Medical Journal.
- Nilsson, A., Jacobson, L., and Ingmanson, C. A. (1967). Side-Effects of an Oral Contraceptive with particular attention to Mental Symptoms and Sexual Adaptation. *Acta. Obstetrics and Gynaecology Scandinavia*, **46**, 537.
- Oswald, I., and Priest, R. G. (1965). Five Weeks to Escape the Sleeping-pill Habit. *British Medical Journal*, **2**, 1093.

- Oswald, I. (1968). Drugs and Sleep. *Pharmacological Reviews*, **20**, 273.
- Oswald, I. (1969). Human brain protein, drugs and dreams. *Nature*, **223**, 893.
- Parry, H. J. (1968). Use of Psychotropic Drugs by U.S. Adults. *Public Health Reports*, **10**, 799.
- Paulet, J. D. (1956). Neurotic Ill-Health: A Study in General Practice. *Lancet*, **11**, 37.
- Pemberton, J. (1949). Illness in General Practice. *British Medical Journal*, **1**, 306.
- Perth, R. E. (1957). Psychosomatic Problems in General Practice. *College of General Practitioners, Research Newsletter*, **4**, 295.
- Priest, N. M. (1962). A Thousand Out-patients. *Lancet*, **11**, 1043.
- Pougher, J. C. E. (1955). Neurosis in General Practice. *British Medical Journal*, **11**, 469.
- Rawnsley, K., and Loudon, J. A. (1962). Factors Influencing the referral of patients to psychiatrists by general practitioners. *Br. J. Prev. Soc. Med.*, **16**, 174.
- Rorie, R. A. B. (1955). Neurosis in General Practice. Letter. *British Medical Journal*, 970.
- Royal College of General Practitioners. (1958). Psychological Medicine in General Practice. A report prepared by a working party. *British Medical Journal*, **2**, 585.
- Royal College of General Practitioners. (1970). *Present State and Future Needs of General Practice*. Reports from General Practice, XIII.
- Sainsbury, Lord. (1967). *Report of the Committee of Enquiry into the Relationship of the Pharmaceutical Industry with the National Health Service, 1965-1967*. HMSO.
- Sample Census. (1966). England and Wales (GRO). *County Report*. Warwickshire. General Register Office. London. HMSO.
- Sargant, W., and Slater, E. (1964). *Physical Methods of Treatment in Psychiatry*. E. & S. Livingstone Ltd., London.
- Sargant, W. (1967). Presidential address, World Psychiatric Association Symposium, "Aspects of Psychiatry", London, November, 1967, quoted in *Nobrium*, Roche Products Ltd.
- Scott, P. D., and Willcox, D. R. C. (1963). Delinquency and Amphetamines. *British Journal of Psychiatry*, **111**, 865.
- Shepherd, M., Cooper, B., Brown, A. C., and Kalton, G. (1966). *Psychiatric Illness in General Practice*. Oxford University Press. London.
- Slater, E. (1960). Galton's Heritage. *Eugenic Review*, **52**, 91.
- Spencer, D. J. (1968). Some Psychiatric Observations in General Practice. *Journal of the Royal College of General Practitioners*, **15**, 107.
- Stengel, E. (1960). *Suicide and Attempted Suicide*. Pelican Books.
- Task Force on Prescription Drugs*. (1968). Background Papers. *The Drug Prescribers*. Office of the Secretary, U.S. Department of Health, Education and Welfare, Washington D.C.
- Taylor, Lord. (1963). Psychiatric Research: A New 'Mental Million'? Volume 1. *British Medical Journal*, 1107.
- Watts, C. A. H. (1966). *Depressive Disorders in the Community*. John Wright & Sons Ltd. Bristol.
- Wearing, M. P. (1963). The Use of Norethindrone (2 mg) with Mestranol (0.1 mg) in Fertility Control. A Preliminary Report. *Canadian Medical Journal*, **89**, 6, 239.
- Wilson, C. W. M., Banks, J. A., Mapes, R. E. A., and Korte, S. M. T. (1963). Pattern of Prescribing in General Practice. *British Medical Journal*, 604.
- Williams, W. O. (1970). *A Study of General Practitioners' Work-Loads in South Wales (1965-66)*. R.C.G.P. Reports from General Practice, No. XII.
- Wolfe, S. (1963). Talking with Doctors in Urbanville. *American Journal of Public Health*, **53**, 4, 631.
- Woodcock, J. (1970). *Long-term Consumers of Psychotropic Drugs*. In Balint et al. (1970).
- World Health Organization. (1964). *Export Committee on Dependence Producing Drugs*. Technical Report Series, No. 287.
- World Health Organization. (1967). *Manual of the International Statistical Classification of Disease, Injuries and Cause of Death*. Based on the Eighth Revision Conference. (1965). Volume 1, Geneva.
- World Health Organization. (1967). Technical Report Series No. 137. *Research in Psychopharmacology*
- Yudkin, John. (1968). Doctors' Treatment of Obesity. *Practitioner*, 1201, **201**, 330.