NATURAL HISTORY STUDIES IN MENTAL ILLNESS*

A DISCUSSION BASED ON A PILOT STUDY OF OBSESSIONAL STATES

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INTRODUCTION

THE history of mediaeval medicine shows clearly that the decline of a science takes place whenever the tendency to theorize overruns the desire to observe and measure. Psychiatry with its shorter medical history has suffered from this tendency until fairly recent times. Even now, it is possible to estimate the efficiency of a nation's psychiatric progress by comparing the amount of factual research with the emphasis placed on unproven theoretical concepts in clinical practice.

It may seem, however, that serious consideration of the natural history of mental illnesses, which have been recognized medically for a century or more, is superfluous. In fact, the importance of such studies has never been greater, for not only is there a need for a yardstick against which the effects of modern therapies may be measured, but there is the more pressing question of the toll taken of national efficiency by any given illness. Only by recognizing this can suitable steps be taken to assess the problem and to devote the necessary medical and other services to overcome it economically. Although many of the issues discussed are obvious, there is some justification for restating them in the light of changes which have taken place in psychiatry since early classical studies were undertaken. Despite the many investigations of isolated and grouped aspects of the course of mental illnesses, there is still a need for comprehensive research.

Certain changes are taking place which merit further consideration of this topic. First is the considerable interest now shown by public and Parliament in the problems of mental illness. It is also a fact that more effective therapies are available now than ever before. In addition, the medical profession and public are better informed, better able to detect early cases and more likely to bring such cases to the attention of the psychiatrist and research worker.

Previously, before more effective therapy was available, large studies were made which now form classics of psychiatric literature (Janet, 1903; Kraepelin, 1921); opportunities to study large samples of patients were not neglected, and the absence of treatment, as we now know it, readily provided a control group in which natural history could be measured. Unfortunately, only the simplest statistical tests were in use in psychiatry until fairly recently and, in addition, concepts of clinical entities were still being evolved so that even excellent clinical descriptions could not define many of the issues that are now significant.

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Beside the inevitable inadequacy of measurement in early work, other factors were the gross severity of many of the illnesses studied, the samples being over-represented in this respect, and the tendency to group together clinical entities which are now separated, e.g. Janet (1903) included tics, "excitements", neurasthenia and depersonalization in his study of psychasthenia.

There is now a tendency in some quarters to regard longitudinal and casuistic studies unfavourably, but these methods have never been overworked, and they have been applied to comparatively few groups of illnesses. Lewis's remarks of over twenty years ago (1936) remain equally true today: "It would be a pity if other quests kept us from making sure of all the plain clinical things that are yet to be seen and studied." From the research worker's point of view such projects have the fortunate characteristic that they always produce a result.

In the present study, attention is first drawn to the subject as a whole. Later, the essentials of methodology applied to this topic are discussed and illustrated with reference to relevant published studies and original work carried out on a sample of obsessional neurotics.

Interpretation and Scope of "Natural History"

Strictly speaking, natural history implies the study of natural phenomena relating to the earth, and to animal life particularly. The term also refers to that which is neither artificial nor pathological, but Ryle's (1936) use of the phrase in his work relating to somatic disease suggests its application to the field of mental disorders. It is not difficult to justify the use of such a descriptive concept, for it denotes far more than the mere course of the illness. The formal textbook method of describing psychiatric phenomena under aetiology, psychopathology, course, prognosis and treatment is an approach readily appreciated by the medical student, but the many variables altering and qualifying the statements made render it difficult, by this means alone, to see fully the problem set by an illness in an individual or the problem to psychiatry as a whole. A knowledge of natural history may be expected to bring better understanding of mental disorders which differ in so many respects from physical ailments.

Even those who deny that body and mind are one and indivisible would admit that the natural history of psychological illness is vastly more complex than that of somatic disorders. Many more factors influence the behaviour of man than influence the behaviour of his component parts, and the long-drawn-out catamnesis of most mental illnesses makes the study of their course more exacting and more lengthy. For this reason, the concept of natural history must be broad, and if the findings are to be useful, the notion should be such that it can be practically investigated. The following is suggested as a working definition: the natural history of a mental illness consists of the detailed development, course and decline of that illness in the lives of individuals in the mass, the characteristics of those individuals, the social effect of the illness, and the factors affecting the pathological processes.

There is no virtue in including under the phrase "natural history" all the facts known about an illness. Essentially, the total concept conveys as a unified whole the development, course and outcome of the illness, the community in which it developed and its incidence, even if this must be expressed statistically in terms of chance expectation.

The starting point is the incidence of the disorder in the general population,

and in psychiatric practice, and an estimate of sex incidence. The main milestones of the disease process, such as age of onset of first symptoms, periodicity of attacks, age at which incapacity occurs, age when first seeking medical or psychiatric advice, follow naturally and can be measured. More detailed study is required to ascertain the mode of onset, variation in severity of established symptoms, mode of recovery or decline, and personality. Particularly difficult is the assessment of prognosis, whether recovery is complete, whether impairment of function remains or whether the patient adjusts to the illness if it reaches a stationary condition. The factors related to prognosis can be statistically presented and aetiological factors investigated. From these data a life chart representing the behaviour of the illness, in an average sense, may be drawn.

With the laudable ubiquity of treatment at the present time there is no alternative to the study of patients whose illnesses have been modified in some way, but provided large samples are assessed and those treated by most effective therapies excluded, the results will still be of value for comparison with the effects of future treatments. For example, the reliable studies of the effect of leucotomy on the course of chronic severe obsessional neurosis (Partridge, 1950; Pippard, 1955) show that the operation produces improvement more often than any other therapy, and it would be reasonable to exclude leucotomized patients from a series used to study the natural outcome of the disorder. There would be little point in excluding patients treated by other methods since there is no firm evidence to suggest that these influence materially the long-term course. On the other hand, many modes of treatment such as reassurance, superficial psychotherapy, hypnosis, group therapy, sedatives and other physical therapies seem to be equally beneficial to sufferers from anxiety hysteria. The study of treated patients remains valuable because the results provide a measure of the virtue of current therapy which future methods should surpass.

At this stage, it may be thought that the adoption of a concept of natural history which includes the study of treated illness is likely to render the work fruitless and nullify the special use of a descriptive phrase. In the subsequent discussion, the alternatives are criticized with a view to encouraging the use of present-day clinical material. One possibility of avoiding patients who had received treatment would be the study of cases in general practice. This course might be suitable for the milder neurotic patient, but the series could never be representative of a disease entity, the interested practitioner would have difficulty in avoiding the administration of treatment in some form, and it would take many years to amass sufficient material from which to draw conclusions. Further, the results, although valuable to the general practitioner, would not apply to the vast majority of patients seen by psychiatrists, and the interpretations of findings from such a biased sample would be extremely difficult. Another method might consist in the investigation of patients whose illnesses occurred in the days when treatment was either ineffective or symptomatic. Unfortunately, the formal centres caring for patients thirty years ago admitted them under certificate only, and a sample drawn from such sources would over-represent severely ill individuals. In addition, less attention was paid to detailed records and differential diagnosis in the days before the existence of treatment made this far more important. A further criterion of selection of patients for investigation rests on the difficulty of separating what is pathological and what is personality, and it seems most practicable to choose patients who have been sufficiently ill to seek specialist medical advice or to have this sought for them.

In summary, the answer to these problems lies in rigid definition of the clinical entity selected, the acceptance of the fact that patients will have had some treatment—preferably conservative, and the study of large numbers of cases to include all degrees of severity of illness to allow for the operation of all the environmental and other factors likely to influence its course.

What is Already Known of Natural History?

A brief review of the existing channels through which knowledge of the natural course of mental illness is gained may help to clarify some of the problems likely to be met in present-day research on this topic. Personal experience in clinical practice is probably the surest method of learning about the behaviour of any disease, but however diligent the physician, there is no short cut to the soundness of judgment possessed by those who have seen many cases over a long period. Arising from personal experience were the anecdotal reports—more in vogue formerly than now—showing the development of an individual's illness and his response to treatment. The general view nowadays would probably be that such reports are more valuable when they represent exceptions to, rather than examples of what has already been reported *en masse*. The misleading nature of some of the older reports need not be laboured, but there is still a tendency to accept findings in individual cases which appear superficially to confirm an hypothesis whilst the unsoundness of the principle that any number of isolated cases cannot prove the theory is ignored.

Official statistics of mental illness show many of the administrative problems, but being derived from multiple sources and being restricted to many statements which are ill-defined, the results are difficult to interpret in terms of clinical practice. However, casuistic examination of patients has provided valuable factual material, especially when large groups have been used. Very often circumstances may limit the scope of the work so that statistical methods cannot be used fully, but investigations of large samples, in detail and over a long period, form classics of psychiatric publication. Although many large-scale studies of patients with mental illnesses have appeared, they have rarely been comprehensive enough to include all the relevant factors, and subsequent attempts to combine the results of different studies in order to gain a complete picture are baulked by the operation of numerous variables in differing concentration in the various samples. Among these variables are definition of illness, length of follow-up, severity of illness and social grouping of the patients studied, and it is unfortunate that it is usually impossible to state categorically which variables are responsible for the differences between several series of results. As an illustration of this problem by the use of findings of eminent research workers, the figures of Kraepelin (1921) and of Slater (1938) regarding the age of onset of the first depressive attack in manic-depressive psychosis may be compared (Table I).

Although Kraepelin found two-thirds of patients in which the first attack began before the age of 40, Slater found two-thirds of patients commencing their illness after that age. Rennie (1942) found the greatest number of first attacks beginning between the ages of 45 and 55. The discrepancy between these results might readily be explained by assuming that Slater and Rennie included more cases of involutional depressive illness than Kraepelin, but this would amount to an assumption which these investigations were designed to prove or disprove.

TABLE I

Age of Onset of First Depressive Attack in Manic-Depressive Psychosis

Age Group (years)	Percentage of Patients Experiencing First Attack	
	Kraepelin	Slater
0–20	19·3	2
20–30	30·7	12
30–40	22·0	19
40–50	14·8	22
50–60	9·9	22
60–	3·3	23
	100%	100%

THE CONTRIBUTION OF NATURAL HISTORY

Quite apart from the philosophical value of knowing "the whole" when one can immediately experience but a part—a principle underlying orthodox psychiatric case-taking—knowledge of natural history may contribute to diagnosis, management and prognosis and provide a means of gauging the effect of therapy in addition to supplying facts of administrative significance.

Diagnosis in medicine usually derives from a train of processes as follows: (*a*) fact gathering—the full case history and physical examination; (*b*) fitting the facts into a pattern; (*c*) comparing the pattern with what is known of the phenomena and natural history of diseases; (*d*) deciding which known entity the pattern most closely resembles. As emphasis in this article is on the numerical appraisal of massed data as opposed to the anecdotal method, case histories have been omitted. The following four examples are used to try to illustrate some ways in which the facts of natural history might be used, to show errors which may be innocently committed, and to stress the need for adequate data on which these methods might usefully be employed. Although the use of figures from widely different sources means that the results must be interpreted with extreme caution, they represent what is perhaps the nearest numerical approach to the selected problem at the present time. In view of the somewhat artificial content of the illustration, it should be said that the author's intention is to demonstrate a principle rather than to try to replace clinical judgment by mathematics.

Example 1: Age of Onset

One of the facts elicited early in any patient's history is the age at which symptoms first began. From this knowledge alone, an idea of the likelihood of the diagnosis may be gained. A case may be postulated in which a patient in the late twenties develops obsessional symptoms for the first time. Although obsessional symptoms are dominant, there is a depressive affect, and the patient's pre-morbid personality is schizoid. For the purposes of this illustration, the less common diagnostic possibilities such as organic causes and mania have been ignored, and attention has been concentrated on the relative expectation of developing schizophrenia, depression or obsessional neurosis in the circumstances postulated. Table II shows the distribution of patients suffering fron one of each of these illnesses, according to the age of onset. The figures for schizophrenia are those of Kraepelin (1919), those for depressive illness were found by Slater (1938), and the distribution for obsessional neurosis was given recently by the author.

TABLE II

Relative Distributions of Patients According to Age of Onset of Illness Specified

Age (years)	Schizophrenia	Depression	Obsessional State
	Per cent.	Per cent.	Per cent.
10–20	27·9	2	25
20–30	48·3	12	38
30–40	18·0	19	22
40–50	4·5	22	8
50–60	1·3	22	3
60–	0	23	4
	100	100	100

Assuming that these statistics were derived from one single general population, one can determine the relative frequency of occurrence for any age group by calculating the product of the percentage of patients beginning their illness at that age and the figure for relative frequency of occurrence of the illness in practice regardless of age. However, these illnesses do not all present obsessional symptoms at the start with equal regularity, and in order to take this factor into account, the product mentioned above should be multiplied by a figure for the relative frequency with which the three diseases show obsessional symptoms at the onset. Estimates for this last comparison vary, but Rosen (1957) found that of 848 schizophrenic patients, 17 (2 per cent.) showed obsessional symptoms at the onset; Lewis (1934) found 21 per cent. of 61 patients with depression showing obsessional symptoms, and it may be assumed that all patients with obsessional neurosis have obsessions as their presenting clinical feature.

Table III gives the data so far mentioned, including the product of the three percentages referred to. This product gives a rough estimate of the likelihood of the hypothetical patient's illness being obsessional neurosis, schizophrenia or depression.

TABLE III

Illness	Obsessional State	Depression	Schizophrenia
Incidence of onset of illness in age group 20–30 years (per cent.)	38	12	48·3
Percentage of cases showing obsessional symptoms at onset	100	21	2·0
Relative frequency of occurrence in out-patients (per cent.)	2·5	23	9·1
Product:			
Approximate expectation of symptoms being due to illness specified	9,500	5,796	880

From this it appears that a patient between 20 and 30 years of age, regardless of sex, with dominant obsessional symptoms at the onset of a recent illness would be most likely to be suffering from a true obsessional state. In fact the "odds" are roughly 10 to 1 against schizophrenia but only 2 to 1 against depression. Although this has exemplified the faulty use of data, and the result is mainly of mathematical interest, the principle is one which if applied appropriately could bring forward conclusions of significance.

Example 2: Conclusions Drawn from Periodicity

A prominent measurable feature of any illness is its periodicity. Other factors apart, there is probably a continuous gradation between purely reactive illness, the onset of which is associated with environmental cataclysms (e.g. some hysterical conversion reactions), and apparently endogenous disease which occurs temporally connected with physiological cycles such as menstruation (pre-menstrual tension and depression). Whereas in the former example, a study of periodicity alone might be fruitless, knowledge of the phasic course in the latter case would be pathognomonic.

The next illustration shows the importance of periodicity in differential diagnosis and discusses the difference in course of manic-depressive psychosis and obsessional states which, as Lewis (1946) remarks, have been diagnostically classified together by some authorities. The author's finding was that roughly 50 per cent. of patients with obsessional neurosis had had past episodes of obsessional symptoms followed by recovery. Table IV shows the proportions of obsessional patients and manic-depressive patients according to the number of attacks of the respective illness. These figures for manic-depressive illness were given by Rennie (1942).

TABLE IV

Proportion of Patients with One or More Attacks of Illness Specified

Number of Attacks	Obsessional Neurosis	Manic Depressive Disorder
One	68 (47%)	21 (10·2%)
Two	44 (30·4%)	79 (38·0%)
Three	18 (12·4%)	63 (30·3%)
Four	12 (8·2%)	45 (21·5%)
Five	3 (2·0%)	— —
Total	145 (100%) Patients	208 (100%) Patients

As might be expected, the greatest number of obsessional patients experienced but one attack, whereas the majority of manic-depressive patients had two or more. Regarding length of attacks, there was much greater similarity between these disorders in that the majority of obsessional attacks lasted less than a year, the average length of manic-depressive attacks being estimated at 6 months (Mayer-Gross, Slater and Roth, 1954). However, the previous attacks of obsessional symptoms were in all cases followed by a more lengthy main illness and an approximation of the duration of this in 150 cases showed an average of 12½ years, this being much longer than the average manic-depressive bout. A further distinction was clear in that no less than 91 of the 141 previous attacks (65 per cent.) studied in obsessional patients occurred before the age of 20, whereas Slater (1938) discovered only 2 per cent. of first manic-depressive attacks beginning before that age.

Example 3: Pre-morbid Personality

A final illustration of the clinical application of results of natural history studies concerns the importance of pre-morbid personality. This is justifiably part of the field considered in that it is the "soil" itself and one of the many variables which influence the development of illnesses. One facet which might be reviewed again is the relationship of personality to mode of neurotic breakdown. Despite the statements by authorities such as Freud (1931) and the fact

that views are widely held that the neurosis is, as it were, an augmentation or caricature of the personality, the relationship does not appear to be so simple. The subsequent analysis, which is part of a study of obsession, attempts to shed light on one aspect of this large problem.

Freud's view was that obsessional neurosis is the pathological reaction *par excellence* to which anancastic characters are particularly liable. On common-sense grounds it would appear reasonable to suppose that the "obsessive" person (Ziehen, 1912) should be more likely to develop obsessions when he becomes ill. In fact, although many obsessional neurotics have an obsessional pre-morbid personality, not all are anancasts, and some seem to have been free of such traits in material concentration. Rüdin (1953) found among 109 patients with obsessional neurosis 67 showing traits of over-conscientiousness, pedantry, inhibition and shyness, 11 who had compulsive traits in childhood and 31 who had never shown obsessional traits before their illness. The author, selecting from a total of 150 patients those in whom sufficiently full evidence of previous personality was available, found that in 115 cases 34 per cent. showed no obsessional traits before their breakdown. Even if these figures must be accepted with caution, the finding of a fair proportion of obsessional neurotics with an obsessive pre-morbid personality does not suggest more than that personality is one factor determining the pattern of the subsequent obsessional neurosis since a considerable proportion of the general population at all social levels shows obsessive traits which are often an asset to themselves. Further disclaiming evidence is that the obsessional personality is found linked with a number of other psychiatric and psychosomatic phenomena such as depressive illness (Lewis, 1934), anxiety states, the unreality syndrome (Shorvon, 1946), anorexia nervosa (Palmer and Jones, 1939), migraine (Elkington, 1946), and duodenal ulceration (Gainsborough and Slater, 1946).

It is in connection with depression that statistical investigation is most telling. Lewis (1936) found anancastic features in the pre-morbid personalities of a third of his depressed patients. The incidence for depression in psychiatric practice may be taken as roughly 25 per cent. (p. 11) which is approximately that found by Watts and Watts (1952), but the incidence of obsessional states in a total psychiatric population of 6,230 cases was found by the author to be only 3 per cent. Even if every obsessional neurotic, but only a third of the depressed patients, had an anancastic character, the proportion of depressed to obsessional sufferers with this character would be in the proportion of 8 to 3, suggesting that anancasts are far more liable to fall ill with depression than with obsessional neurosis—this being a conclusion at variance with many strongly held views.

Example 4: National Efficiency

So far the discussion has centred on points of clinical interest, but another aspect to which natural history may contribute is that of the effect of a disease on the nation. Nowadays it is insufficient merely to know how many patients suffer from an illness and for how long mental illnesses collectively keep men off work. Further analysis is desirable to assess which social or income groups are affected chiefly, for example: Are manual workers or executives the main sufferers? Is intelligence related to incidence? In addition it is material at what time of life the illness strikes and whether individuals succumb during the active striving periods of life, in their prime or after their main work has been achieved.

The degree of incapacity borne by the individual is a starting point for wider studies such as the strain taken by relatives. For example, the parents are those mainly concerned with the anamnesis and after-care of the young schizophrenic, the spouse is often affected by the obsessional breakdown occurring in a patient in the thirties, and the children may bear the brunt of a parent's senile illness.

Other important aspects are the hospital services needed to deal with a given illness, the need for long or short term in-patient care and whether admission to hospital will be recurrent, regular or irregular. The necessity for legal intervention may be measured, giving an impression of the need for certain types of hospital and administrative services. For example it might be asked what proportion of depressed patients requiring hospital admission could be treated in general hospitals? Out-patient treatment needs could be assessed in terms of realistic economy, bearing in mind the expense of psychoanalytical methods contrasted with physical methods and their relative efficacy in relation to certain diseases. A natural history study may show whether the patient's after-care is likely to rest mainly with the family, the general practitioner, the social services, hospital out-patient clinics, or the occupational therapy or industrial rehabilitation unit. Natural history in the medico-legal field such as further comprehensive study of the lives of murderers, psychopathic personalities, alcoholics and homosexuals, difficult though a longitudinal approach would be, would provide data essential for the allocation of adequate means of management and possibly a foundation for new legislation.

A total picture of the administrative needs of any illness and its damaging effect on national efficiency should help to guide research along the most valuable lines, and avoid the misuse of services already set up, and should lead ultimately to the adoption of prophylactic measures.

Essentials of Study of Natural History

To enable the clinical psychiatrist to utilize the results in the consulting room and hospital, and to ensure a firm foundation for the study, the disease entity selected should be sharply defined in commonly-used terms. Perhaps the safest plan is to select a well-known entity and to describe the criteria used to amass the case material.

The research worker in clinical psychiatry is rarely able to select existing records for ideal use. In natural history studies much of the detail of the onset, course and aetiological factors are to be found in orthodox records, but in certain aspects, such as prognosis, the research worker or his team must carry out additional investigations. For this reason, under present research control, the project must be limited to the bounds of practicability. At the other extreme, the design of the research should not be restricted to the easiest route producing early results. The hitherto "cast-iron" data taken as a statutory duty from cases admitted to mental hospitals—so readily tapped and so easily to hand—rarely allowed conclusions of wide significance to be drawn from them.

Having defined the manifestations under review, a sample large enough for statistical evaluation must be obtained, the actual size of the sample being determined by initial mathematical calculation, taking into account the frequency of the included variables. This sample should be drawn from a general population whose psychological character, racial history, social and working conditions are known, The difficulties involved in proper representation in the sample of the whole of a large population may be avoided if a small

geographical unit can be adequately explored. Here again the restricted value of the result must be taken into account. Unfortunately the large samples of patients and records available in mental hospitals rarely provide representation, in so far as the illnesses are severe. Further, the indications of recovery are vague and often no follow-up is taken. Perhaps the most recent example of a satisfactory solution of this problem is shown by the masterful exposition by Hollingshead and Redlich in their study of social class and mental illness (1958).

If a group of workers are employed in the research, agreement on the factual criteria to be observed in selection of cases and collection of data should be reached early; if necessary after a pilot study. Particular care is required to ensure that all the factors needed to reach firm conclusions are investigated in a sufficient number of patients. The choice of these facts depends mainly on what is already known of the illness from clinical experience and from the results of similar earlier studies aiming at natural history.

The techniques useful in ascertaining clinical facts in follow-up studies have been fully discussed by psychologists who have been concerned with the difficult problem of assessing the beneficial effects of psychotherapy or analytical treatment. Although the ideal is to interview both the patient and a reliable informant, this method does not replace others less exacting; it does, however, safeguard against many errors. Other sources of information are postal questionnaire replies, social workers' reports, out-patient and in-patient case-notes, the patient's general practitioner, the in-patient and out-patient medical and nursing staff, and other psychiatrists who have attended the patient. In practice every source is utilized and the research worker decides which are the most valuable objectively. A popular method of beguiling simplicity, the postal follow-up, has been criticized by Lewis (1936), Berg (1952), Watson (1952) and Woodside (1953) among many others. There is however something to be said for the method used alone or to gain additional information. It is only in certain aspects of the study that the method falls short, for example in prognosis of patients whose illness has caused intellectual deterioration, and for estimating the present mental state. Woodside (1953) drew these conclusions: "That the information obtained is subjective and coloured by the patient's mood, that it is affected by the concentration of abnormal social personalities likely to be found in a psychiatric patient group, and that the stigma attached to mental disorder may lead a patient to resent a reminder of a previous breakdown." She adds that the questionnaire method cannot compare with more profound studies but it does give a general impression of the whole scene; also that in a large survey the psychiatrist may have to compromise between giving personal interviews and adopting a practicable method. Perhaps the greatest factors promoting the success of a questionnaire are its design and the patients to whom it is sent. A combination of a simple factual series of interesting questions and a group of neurotic, preferably obsessional patients, might be expected to produce satisfactory results. A pilot study quickly reveals whether or not the method will be valuable. The validity of the questionnaire may be measured if the results given by a group of patients (unknown to the investigators) are subsequently checked by personal interview. In general it might be said that the questionnaire method will be of use provided that certain groups of patients are not assessed on this alone, these being post-leucotomy cases, compensation neurotics, alcoholics, addicts, psychopaths, deteriorating psychotics and those with organic states.

Having elicited the facts from a representative sample of patients, statistical

analysis is undertaken so that the results may be appreciated readily and applied in practice. The standard tests are usually sufficient to enable concise and accurate expression of the conclusions so that the final step of building up a picture representing the temporal and quantitative features of the disorder can be taken.

Two aspects mentioned earlier require special treatment, these being aetiological factors and prognosis. The first principle in studying prognosis is that the whole of a representative sample of patients should be traced. Very often there is difficulty in tracing patients some years after they have finished formal treatment; the sample then fails to be representative and bias is introduced. This difficulty is enhanced by the operation of another desirable principle—that follow-up should be as long after the beginning of the illness as possible to allow for the slow-moving but inevitable changes seen in mental illness. Thus the task of conducting a proper follow-up study may be arduous, although the fascination of a profound study of this kind has been encouragingly exemplified in the accounts given by Partridge (1950) and by Pippard (1955) of their studies of widely distributed leucotomized patients.

In the assessment of aetiological factors, all preconceived notions are set aside. Only if this is done can the *post hoc ergo propter hoc* fallacy—foremost in some analytical theories—be avoided. Perhaps there is no realm of mental illness in which the inexperienced find more difficulty in keeping an open mind than in that of aetiology. Yet in psychiatry, of all specialities, there are few illnesses whose aetiology is proven. To attack this problem it is essential to find those factors operating before the earliest manifestations of the illness itself for, as in neurological cases, so often a cataclysmal event is a consequence of the disordered psyche rather than its cause. Only facts can be utilized, for as Straus (1948) has remarked: "The unconscious thoughts of patients are nothing more than the conscious opinions of their physicians".

The Natural History of Obsessional States

This section gives the results of the author's attempt to study the natural history of an illness which has attracted the interests of psychiatrists to a considerable degree. Obsessional neurosis was selected because of the somewhat hesitant statements about it in current textbooks, and the dearth of comprehensive data, especially regarding prognosis. Full statistical detail, extended treatment of certain aspects, pre-morbid personality and precipitating factors, and case histories have been omitted for the sake of brevity.

For this investigation, an obsession was defined as "a recurrent or persistent thought, image, feeling, impulse or movement, which is accompanied by a sense of subjective compulsion and a desire to resist it; the event being recognized by the individual as foreign to his personality and into the nature of which he has insight". An obsessional illness or state was regarded as one in which obsessional symptoms were dominant, there being no other recognized mental reaction responsible for them, and for which the patient sought medical advice. There was no evidence to suggest an organic aetiology for the symptoms in those selected for study.

1. *Method of Selection and Case Material*

The case material was chosen from the total patients admitted to the psychiatric in-patient unit of a London hospital over a period of eight years, and from the whole of the patients seen privately by a consultant psychiatrist.

Of the 150 patients chosen, 69 had been in-patients and 81 had been seen privately as "out-patients". The hospital patients comprised 18 (26 per cent.) males and 51 (74 per cent.) females (a larger number of female beds being available during the relevant admission period). The private "out-patients" included 45 (55·5 per cent.) males and 36 (44·5 per cent.) females.

Information was collected from case records, from reports kindly sent by other psychiatrists and from data provided by social workers, and the medical and nursing staff. When possible, patients and their relatives were seen personally. After modification in the light of a pilot run, a specially designed questionnaire was sent to all patients. In the assessment of each case all available sources of information were used, but in no instance was a favourable outcome assumed on the basis of a postal reply alone.

2. *Age of Onset of First Symptoms*

Owing to the periodicity shown by the course of the illnesses studied, the age when first symptoms began was distinguished from the age of onset of the main illness. Table V shows the distribution of 141 patients according to the age at which they experienced obsessional symptoms for the first time.

TABLE V

Age Group (years)	Number of Patients Developing First Symptoms
6–10	22
10–15	25
15–20	27
20–25	22
25–30	14
30–35	11
35–40	10
40–45	6
45–50	0
50–55	1
55–60	0
60–65	1
65–70	1
70–75	1
Total	141

In 68 patients who had no previous attacks, the first symptoms constituted the present illness. The majority of patients (68 per cent.) experienced their first symptoms before the age of 25, and only four after 45 (2·7 per cent.). As age increased above 20 years fewer and fewer individuals developed symptoms for the first time. The mean age when first symptoms came on was 21·6 years in females, and 20·2 years in males; there was no significant sex difference.

3. *Earlier Attacks*

Frequently patients' histories revealed that attacks of obsessional symptoms had occurred before the main illness, each attack ending in apparent recovery. Of the 150 patients, 100 had reported such earlier episodes and 82 of the latter had sought medical advice at the time. These 82 individuals had experienced between them 162 attacks, the average number of attacks per patient being roughly 2, but the extremes were 1 and 10 attacks. Regardless

of the number of individuals involved, 28 per cent. of attacks occurred between 11 and 15 years of age, 23 per cent. between 16 and 20, and 17 per cent. between 21 and 25, the peak being from 11 to 15 years with its developmental associations of puberty. In general the attacks were in childhood, adolescence or early adult life rather than later on.

Further detailed analysis of the earlier episodes revealed that 79 per cent. of them lasted less than a year.

4. *Age of Onset of Main Illness*

The main illness was the unremitting train of obsessional symptoms for which a patient sought advice privately or at the hospital. Table VI shows the patients distributed according to their age when this illness began. Half the total number of patients began their illness in late adolescence or early adult life between the ages of 16 and 30 years, only 7·3 per cent. starting after 45. The mean age of onset of the main illness was 28·4 years.

TABLE VI

Age of Onset of Main Illness (years)	Number of Patients
6–10	5
10–15	12
15–20	21
20–25	32
25–30	25
30–35	16
35–40	18
40–45	10
45–50	2
50–55	2
55–60	1
60–65	4
65–70	1
70–75	1
Total	150

The relative expectation of developing an obsessional illness with increasing age, calculated from the data of the above table, is shown in Table VII.

TABLE VII

At 20 years	25 per cent. of the danger is past
At 30 years	65 per cent. of the danger is past
At 40 years	85 per cent. of the danger is past
At 50 years	91 per cent. of the danger is past
At 60 years	94 per cent. of the danger is past
At 70 years	97 per cent. of the danger is past

5. *Disablement*

The age at which the patient was incapacitated by his illness was found in 121 cases. The criterion used was inability to carry out accustomed work or social duties which were a material part of the individual's life. In the hospital series, when no other information was available, admission to hospital was taken as the time of incapacity.

https://doi.org/10.1192/bjp.106.442.93 Published online by Cambridge University Press

Three-quarters of the patients were incapacitated before the age of 40. Approximately half broke down within a year of the onset of symptoms forming the main illness, but the remainder were incapacitated only after a considerable number of years had elapsed. The mean duration of the main illness before the patient was disabled was 4·7 years.

6. *Endurance of Symptoms*

An estimate of the period of suffering in the main illness before each patient was seen for the first time privately or at hospital showed that of 150 patients, approximately half attended within two years of the onset of symptoms and nearly a quarter were seen after 10 years. The average period between onset of the main illness and attending for advice was 7·5 years.

7. *Prognosis*

Altogether 101 patients were followed up by one or more of the methods enumerated earlier. The length of follow-up from the time patients first attended for advice was between 3 months and 15 years (mean: 3·5 years). A simple rating scale, similar to that given by Müller (1953), was used to classify the patient's state of adaptation viz.:

Group 1: Patients who were socially adapted and symptom-free.

Group 2: Those who were socially adapted but still experiencing mild symptoms.

Group 3: Those who were poorly adapted socially but whose symptoms had improved.

Group 4: Those whose symptoms were worse or as severe as when they were first seen.

Group 5: Those whose obsessional symptoms had been replaced by other phenomena.

Table VIII shows the patients distributed in these groups at the end of the follow-up, leucotomized cases being separated for this analysis.

TABLE VIII

	Group							
	1	2	3	4	5	Dead	Suicide	Total
Leucotomized ..	15	6	7	5	0	0	1	34
Non-leucotomized	16	24	8	17	1	1	0	67
Total (patients)	31	30	15	22	1	1	1	101

Two-thirds of those followed reached a stage of social adaptation, half of them becoming symptom-free.

To define more closely the results after a definite period, and to allow for the periodic course noticed, Tables IX and X show respectively the patients' state after one or more, and after four or more, years from the time they first sought advice.

TABLE IX

	Group					
	1	2	3	4	5	Total (Patients)
Leucotomized	12	6	7	4	0	29
Non-leucotomized	19	18	6	9	1	53
Total	31	24	13	13	1	82

TABLE X

	Group 1	2	3	4	5	Total (Patients)
Leucotomized	4	4	4	3	0	15
Non-leucotomized	12	9	3	5	1	30
Total	16	13	7	8	1	45

Of the small sample of patients reviewed after four years, two-thirds of those not leucotomized were socially adapted and over half of these were free of symptoms.

8. *Factors in Prognosis*

In view of the very few prognostic factors described in the literature, an attempt was made to relate some of the variables estimated to the patient's progress.

It might be expected that the beginning of obsessional neurosis early in life would be associated with a poor prognosis. In fact, no significant difference in age of onset was found between those who did well and those who did badly. This result agrees with Müller's opinion that no prognostic conclusion could be based on the age at which the illness began.

Straus (1948) described two groups of obsessionals according to outcome. The first group noticed a sudden onset of symptoms in the third decade or thereabouts and showed a good prognosis; the second group with continuous development from an early age tended to reach a state of severe invalidism. However, among the 150 patients in the present series, very few noticed a sudden onset and only one of these was found to have a good outcome. Müller (1957) found that all his patients described an insidious start to their symptoms.

The fact that patients had had previous attacks appeared to affect the prognosis favourably, but there was no association between the number or length of such attacks and prognosis. However, the finding of a good prognosis in those showing a phasic course may be due to the greater chance of reviewing such patients in a remission. Further, a phasic course suggests that future episodes may occur and from this point of view the outcome is poorer. The conclusion reached was that a past history of previous episodes of symptoms could not be used as a prognostic guide.

Partridge (1950) found that obsessive-compulsive rumination yielded more readily to pre-frontal leucotomy than did ritualistic behaviour, but an analysis of the present series showed no significant difference in prognosis between the ritualists and non-ritualists who did not undergo neurosurgical treatment. This may be due to the fact that patients not operated upon had milder forms of illness.

Pre-morbid personality did not influence the outcome of obsessional illness to the degree expected. Although the number of patients assessed was small, the only significant finding was that there were more individuals with few obsessional traits (as opposed to those with many such traits or alternatively no traits) in the group of patients who fared well.

The most profound influence on prognosis was the duration of the obsessional state before the patient sought psychiatric advice. The mean duration of the illness until the patient was seen privately or at hospital was 3·0 years in those who became symptom-free, and 8·1 years in those who

showed no improvement at the end of the follow-up. The patients with a good prognosis were seen after a significantly shorter period of suffering than were the patients with a poor prognosis ($P=0\cdot05$). Further evidence to support this finding was obtained from estimation of the total duration of the illness in those patients with a good prognosis, i.e. those who became symptom-free or socially adapted (Table XI). Over half the patients who did well had less than 5 years of illness and less than a quarter had more than 10 years. The longer the duration of the illness the fewer patients were found to have recovered.

TABLE XI

Duration of Illness (years)	Number of Patients Recovered or Improved
0– 2	22
2– 5	15
5–10	11
10–20	7
20–40	6
Total	61

CRITICISM

The chief criticisms of this study of obsessional states centre on the problems of sampling and the investigation technique, but it should be said that the technique adopted was a compromise between a recognized ideal and what could be accomplished with the facilities available.

The size of the sample was adequate for most purposes such as the study of the onset of the main illness, previous attacks, age of breakdown and age at which psychiatric advice was sought; this was so because relevant information was available about a majority of the individuals in these respects. For the follow-up however, only two-thirds of the original group could be traced, and only in a fraction of this number could an assessment after a reasonable period be effected. This circumstance illustrates the importance of amassing a substantial sample initially, for even the most zealous investigator must expect to miss a proportion of the total material in the follow-up. To report only on patients traced and followed and to ignore those lost is merely to create a false impression, and it is undoubtedly better to qualify the results of a partial study rather than present the misleading results of an apparent 100 per cent. follow-up on a smaller group. Further, some guide to the prognosis of those untraced can usually be found in the case notes based on the original clinical investigation. Although large samples of obsessional states are desirable for study, the comparative infrequency of their occurrence (3 per cent.) means that a sample of 300 patients would require a total patient population of 10,000 from which to select. Undoubtedly this factor must have accounted partly for the dearth of large-scale studies in the past.

The second aspect of sampling was the problem of representation of all forms of severity of obsessional neurosis. The series contained a majority (54 per cent.) of "out-patients" with milder illnesses and, as 31 of the hospital patients with more severe states were leucotomized, the remainder (38 patients) did not equal the many milder cases included. This resulted in a bias towards milder illnesses in those patients used to demonstrate the natural outcome. Another bias was in favour of the female sex, females predominating in the sample (87 females, 63 males). This ratio was apparently brought about by

administrative factors in that more female beds were available for admission during the relevant period. If in fact females are more liable to develop obsessional states than males, it might be justifiable to ignore the detailed distribution, but the findings of other workers vary. Janet (1903) remarked on the considerable preponderance of females in his cases of psychasthenia among which were 230 females but only 95 males. Terhune (1949) in a series of 86 patients with phobic reactions found women twice as frequently as men; women predominated in Rüdin's large group of in-patients and out-patients (1953). Müller (1953), however, in a series of 57 obsessionals, discovered the inverse proportion (20 females, 37 males). In the absence of convincing reports, the figures for the present study must be assumed to over-represent the female sex.

Another influence affecting this sample was social class or income group. Lewis's view (1936) was that the obsessional patient's characteristic insight had misled many authors to assume that such individuals were of higher intelligence than average. There are, however, independent observations by a number of writers which suggest that patients suffering from obsessions are more likely to be found amongst more gifted, more intelligent and more energetic folk. Morel (1866) noted that intellectuals and those of the professional classes were more likely to suffer from obsessions; Stekel (1950) wrote that compulsion neurotics were frequently intelligent, gifted persons, even people of genius; Gruhle (quoted by de Boor, 1949) found that obsessions were usually manifest in more differentiated personalities or those with high intellectual standards; Müller (1953) also found obsessionals to be gifted, versatile and energetic. Similar views have been expressed by Bleuler (1924), Jelliffe and White (1935), Woolley (1937) and Schneider (1958). The recent statistical study by Hollingshead and Redlich (1958), however, shows convincingly that obsessional illnesses are progressively more frequent with ascent in social class, and it may be that the sample used for this study was truly representative in this respect.

Other difficulties in studying the present group of obsessionals concerned the follow-up technique. The time and facilities available did not allow for a personal interview with each patient and a relative, but all other sources of information were tapped, the final assessment of a patient's state at the end of the follow-up being a subjective judgment based on these. The actual sources were as follows:

Direct:	Personal interview with patient.
	Personal interview with relative or informant.
Indirect:	Out-patient notes and opinion of physician.
	Social worker's report.
	General practitioner's report.
	Report from other psychiatrist or hospital.
Purely Documentary:	Replies to routine, periodic, hospital questionnaire.
	Replies to specially designed questionnaire.

In the following table, the patients are shown distributed according to their follow-up category (p. 26) and the best source of information available.

Undoubtedly, the weakest method used was the postal follow-up, the defects of which have already been mentioned briefly. Subsequent detailed

TABLE XII

Follow-up Category	Best Source of Information: Direct	Indirect	Documentary
1	7	24	0
2	7	19	4
3	8	5	2
4	5	9	8
Totals	27	57	14

98 patients

analysis of the questionnaire replies from patients showed that there was a high degree of internal consistency in answering, and that in those cases where objective evidence was later obtained, the degree of accuracy in replying was also high. In the light of Woodside's (1953) remarks on the poorer quality of answers by sociopathic individuals, it is perhaps in the obsessional group that the results are most likely to be reliable. An observation by Miles, Barabee and Finesinger (1951), on what might be a less reliable group, is of some interest. They found in a series of patients with anxiety neurosis that the patients' evaluation of their states correlated highly with the psychiatric assessment (0·79). Against this evidence must be set the secretiveness of the obsessive character, stressed by Laycock (1845), Freud (1907), Stekel (1950) and Rosen (1957); this may be one explanation for the long delay between the onset of symptoms and the patient's attendance for advice (p. 25). In fact in the present series, no patients were assumed to be symptom-free on the basis of their postal replies alone. Although the follow-up period seems comparatively short (3·4 years), the average duration of illnesses suffered by the patients at the conclusion of the survey was 12·5 years, so that the results cover a much longer period of illness evolution.

SUMMARY

Bearing in mind the qualifications applying to the work, certain conclusions were reached from the findings in this study of the natural history of obsessional neurosis.

The incidence was low in psychiatric practice, being less than 5 per cent. in both private and hospital cases and in both sexes. The figures compare favourably with those of Terhune (1949) and Müller (1953) and give some indication of the degree of selection employed.

The age of onset of first symptoms was roughly equal in both sexes, and in the majority of patients it was before the age of 25. After 20, the risk of developing obsessional symptoms decreases with increasing age. Müller's report suggests a similar age distribution to the present, and although Freud (1913) declared that the first symptoms of obsessional neurosis declare themselves between 6 and 8 years of age, most obsessionals seem to date the onset later.

Half the patient's illnesses showed a phasic course with an average of two attacks before the main illness. Two-thirds of these attacks began before the age of 20 and 90 per cent. before 30. These episodes were usually short (79 per cent. lasted less than a year) and clinical recovery apparently followed. The periodicity of the attacks differed from the course of manic-depressive illnesses in general in that the attacks occurred during early life and in all cases they were followed by a prolonged illness. Obsessional symptoms occurring before

the age of 30 often have a good prognosis and this should be borne in mind when considering leucotomy.

The main illness occurred during the active, striving periods of life between the ages of 10 and 45 in the majority. After the age of 30, the risk of developing obsessional neurosis diminished with increasing age, and the decreasing attendance in higher age groups is suggestive of improvement in some patients. The importance of these facts reported earlier by Janet (1903) and Greenacre (1923) has not been widely stressed in relation to the differential diagnosis of obsessional symptoms, although Lewis (1938) warned of the increased liability of organic aetiology for obsessions beginning in later life. In summary, the late onset of obsessions should lead to the exclusion of organic causes and other mental reactions before obsessional neurosis is diagnosed.

Three-quarters of the patients were disabled before they were 40; only 10 per cent. after 50. Supporting, in some respects, Pavlov's (1941) dog-human analogies, these patients showed considerable temporal resistance to breakdown since the average period of the main illness before advice was sought was 4·3 years. This delay might be partially explained by the patients' secretiveness, but curiously enough Hall (1935) found that there was a similar delay in sending children with obsessions for investigation; often 2 to 5 years elapsed before the condition was recognized.

The follow-up showed a less gloomy picture than many painted in textbooks. The findings suggested that a third of obsessional patients will become free of obsessional symptoms or reach a stage of social adaptation at least for a period of time. If the bias produced by failure to trace all patients could be ignored, it can be said that two-thirds of a large group of obsessional neurotics will become socially adapted and that half of these will be free of symptoms.

The following table shows earlier results in rank order according to increasing bulk of the samples. For this comparison, the possibility of recurrence of the illness has been ignored.

TABLE XIII

Author	Date	Sample Size	Length of Follow-up	Percentage of Cases with Good Prognosis
Rüdin	1953	130	2–26 years	39
Müller	1953	57	15–35 years	49
Lewis	1936	50	5 years and over	56
Hastings	1958	23	6–12 years	44
Yaskin	1936	13	—	50

These results are based on different populations in that Swiss, German, North American and British patients have been separately sampled. If the lowest finding in the present series is added, and the number of patients with a good outcome in all the samples is calculated as a percentage of their joint total (374), the figure of 43 per cent. is obtained. This overall estimation helps perhaps to neutralize many of the differences between samples, follow-up length and technique, and might be used clinically as a prognostic guide.

Investigation of prognostic factors in the present series was disappointing but it was concluded that the most favourable prognosis depended on the duration of illness before the patients were seen, those seen within a shorter time of the onset having a better chance of recovery, regardless of the actual age of

beginning the illness. In addition, patients with obsessive personalities seemed to do better than those with either anancastic or non-obsessional characters.

Conclusion

The importance of a thorough case history has long been realized in general medicine, and credit for the most recent and broad emphasis of this need in psychiatry is due largely to Adolf Meyer. Although clinical psychiatry has developed extensively, it is suggested that natural history studies of many reactions—classical and atypical—are an additional but virtually untapped source of information which could play an important role in diagnosis, management and many other aspects of clinical and administrative psychiatry.

Nowadays, since the introduction of more effective methods for treating some of the commoner illnesses, psychological medicine is thriving on a practical basis. We should not, however, allow our enthusiasm for the purely therapeutic approach to blind us to the need for a better understanding of the full range of psychological abnormalities. By establishing the broad principles of their natural evolution we may more readily decide upon the best methods for their prevention, alleviation and cure.

It is submitted that the results of the present enquiry, based on a study of the natural history of one of these illnesses, the obsessional neurosis, indicate a sound means of achieving our aim.

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