The use of health diaries in the field of psychiatric illness in general practice

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SYNOPSIS The individual’s response to the occurrence of symptoms is conditioned by a variety of non-medical factors, of both an enduring (e.g. personality attributes) and a changing nature (e.g. social support). The health diary provides a particularly appropriate method of studying the daily variations in health and illness behaviour which make up so much of the clinical content of general practice.

INTRODUCTION

In a recent collection of social studies in medical care, Mechanic (1982) suggested that the main task for behavioural scientists working in this field is to understand why people with similar complaints behave so differently. The term ‘illness behaviour’ was originated by Mechanic (1962) to characterize the considerable variation in the ways in which people perceive, evaluate and respond to physical and psychological discomfort. The type of behaviour could not be regarded as a direct consequence of the nature and severity of the symptoms; many other non-medical factors appear to shape the response.

Large-scale health surveys provide some opportunity to compare in retrospect the behaviour of individuals who report similar complaints. It would appear that self-reported symptoms in the general population are so commonplace that few of us are symptom-free for long (Logan & Brooke, 1957; Dunnell & Cartwright, 1972). In the latter study, 91% of adults reported symptoms during the two weeks prior to interview, although only 16% had consulted a doctor during that time. Studies such as these clearly demonstrate the inadequacy of measuring either the incidence or the prevalence of illness through medical records. Only the tip of the iceberg of ill-health is seen in the consulting room, and little is known of the nature of the treatment afforded to the vast majority of symptom episodes.

It does not seem to be the case that only the more serious complaints are brought to the doctor’s attention. Zola (1973) points out the curious paradox that in community surveys quite serious illnesses are found which have not received medical attention and yet the bulk of medical practice seems to be concerned with minor disorders. Since he finds little to distinguish medically attended disorders from ones which are ignored or treated at home, Zola proposes the following empirical picture of illness episodes. While people suffer from an array of discomforts almost daily and there is little in the nature of the symptoms which seems to determine which do and do not get professional treatment, something ‘critical’ must happen to turn a person into a patient. He postulated a number of non-medical reasons (or triggers) for consulting at a specific point in the illness: an interpersonal crisis, for instance, or perceived interference of the symptoms with daily activities. The type of cue to action seemed to depend on the cultural background of the patient.

While there remains much to explore in the diverse behaviour of individuals of similar health status, a greater research challenge is posed by the intra-personal variations in illness behaviour. Why is it that in the same individual a complaint which arouses little concern on one occasion may lead to great discomfort, anxiety and a medical consultation at some other time? Is it possible to account for the development of an illness and the subsequent actions of the sufferer by exploring...
the events preceding the report of symptoms? Can a greater understanding of illness behaviour be achieved from a detailed prospective monitoring of the health of individuals than from retrospective accounts? Such detailed monitoring calls for methodological approaches more familiar in clinical and pharmacological trials than in socio-medical studies. While methods of successive, controlled observation have been used to evaluate the efficacy of treatments, they have rarely been used to study individuals who are neither patients nor experimental subjects.

**Single-case design**

The method of intensive single-case research, with the subject making his own health assessments and acting as his own ‘control’, was pioneered by Hogben & Sim (1953). Their objective was to determine whether the subject’s symptoms of fatigue and muscular weakness (‘low grade morbidity’) were those of myasthenia gravis or whether they were functional. Three drugs were to be administered blind for diagnostic purposes and the subject was to make detailed self-reports at predetermined times of day. They argued that rigorous control of physiological, anatomical, genetic and social variables would result from the subject acting as his own control when successive observations were to be made. Changes in somatic and psychological functioning reported by the subject could more readily be attributed to the effects of the different drug treatments. Self-recording, on predetermined indices, was the most appropriate method, since an external observer would be impossibly intrusive and would influence the very behaviour under scrutiny.

The development of single-case research occurred largely in the field of experimental psychology and, more specifically, operant conditioning (e.g. Skinner, 1938) with an experimenter present to control the stimuli and to record the response. Behaviour (or overt performance) measures were narrowly defined to enable the precise measurement of responses to controlled stimuli. However, there is no apparent reason why single-case design need be limited to experimental settings or to the performance of narrowly specified behaviour (Kazdin, 1982). Since the main procedural requirement is continuous assessment, other methods such as self-report and psychophysiological measures can be used (Shapiro, 1966).

Most single-case designs in the field of applied clinical research have involved interventions controlled by an experimenter or a therapist (Barlow & Hersen, 1973). However, if we adopt this design to study the natural history of an illness episode, the independent variables (such as stressful events, accidents, contact with sources of infection) cannot be controlled, and the ‘experimenter’ is replaced by the ‘observer’. The present paper is concerned with intensive single-case design where no experimental conditions are imposed. The ‘observations’ are obtained in the subjects’ natural environment and are recorded by the subjects themselves. No controlled stimuli or treatments are administered to the subject and the dependent variables are idiosyncratic, in that they form part of the subject’s normal repertoire of behaviour. The term ‘descriptive’ has been applied to this type of single-case investigation (Shapiro, 1966).

Recent reviews of single-case research (Chasn, 1979; Kazdin, 1982) provide support for widening the scope of this methodology. Conditions once regarded as *sine qua non* are increasingly seen as optional, and the operational necessity to reduce the components of human behaviour to unrealistic simplicity before they can be measured need not apply in all disciplines. Naturalistic observation has become more acceptable and behavioural scientists seem less inclined to borrow from the laws of classical physics in postulating theories of human behaviour. Herbst (1970) suggests that it is pointless to seek for the invariance in phenomena which a scientific law demands, since ‘every person and every group has the characteristics of a behavioural universe which evolves its own laws and measurement scales’. However, this does not rule out attempts to apply these personal ‘laws’ to other individuals, provided that the parameters and functional relationships of the variables are clearly defined.

The pilot study of general practice patients, to be described later in this paper, owes much of its design rationale to the pioneering work of Hogben & Sim (1953). The method selected to record the repeated measures was the self-report health diary, since it came closest to meeting the criteria for a non-intrusive method of monitoring.
the natural history of illness episodes. Using single-case design also eliminated the need to control for known socio-cultural influences on illness behaviour, such as social class (Koos, 1954), ethnic origin (Zborowski, 1952; Zola, 1973) and age (Maddox, 1964). It must be acknowledged that a generally applicable model of illness behaviour can only be tested on grouped results from large samples to take account of these socio-cultural variations. This is beyond the scope of the present paper.

The health diary method

Given the frequency and transience of most symptom episodes and the very limited extent to which medical intervention is sought by most of the population (see Horder & Horder, 1954; Logan & Brooke, 1957; White et al. 1961; Dunnell & Cartwright, 1972) health records and retrospective interviews cannot provide sufficient or precise data to study the events which precede and follow the onset of illness. The disparity between the experience of symptoms and medical attendance is dramatically revealed in health diaries. While Horder & Horder (1954) and White et al. (1961) in retrospective surveys estimated a ratio of 3-4 non-attended symptoms to every symptom for which medical help was sought, a health diary study of women registered with a South London practice showed that only one in 37 symptom episodes was treated by a doctor (Banks et al. 1975), and a similar, though smaller, diary study (Freer, 1980) found that only one in 40 symptoms was likely to be treated medically. It should be emphasized that this low ratio of consultations to symptoms was recorded by young women, a group with high rates of general practice attendance despite generally good physical health. Health diary studies of men might reveal even greater proportions of unattended illness.

Allen et al. (1954) made one of the earliest methodological comparisons of retrospective interviews with health diaries. They found much higher prevalence rates using the latter method, with interesting variations by type of symptom. Gastrointestinal disturbances were almost five times as likely to be recorded in diaries than recalled at interview for the previous month, whereas infective or parasitic diseases were equally recalled in both methods. The diary excelled most significantly in obtaining reports of mental disorders (including ‘nervousness’ and ‘headaches’), for which the disparity was six to one. Even when illness episodes had been medically attended, they were still more likely to be recorded in the diary than the interview covering the previous month. However, a serious flaw in the design of this study was that the respondent acted as proxy for all members of the household in recording illness episodes, both at interview and in the diary. Presumably the prospective nature of the diary allowed the respondent to obtain more accurate daily health reports from other members of the household.

Verbrugge (1980) has reviewed the benefits and drawbacks of health diaries and reached the firm conclusion that the diary is superior to the single extensive interview in:

(i) reducing recall error and producing higher levels of reporting, which yield higher incidence rates, both for acute conditions and for chronic conditions which are symptomatic during the diary period;

(ii) counts of diffuse conditions, for which people do not know the underlying medical condition, and for non-disabling and non-attended illnesses;

(iii) providing a more comprehensive view of people’s health and illness behaviour.

Verbrugge suggested that the main drawback of the method lies in the very wealth of material it generates: the amount of detail strains the capacity of analytical and statistical techniques. Another challenge posed by sequentially repeated measures is the analysis of time series data, since it would be an oversimplification to treat each day’s events as independent of preceding days. Methods of time series analysis discussed by Kratochwill (1978) and Chassan (1979) may offer some solutions. Data from each case can be examined for trend over time by plotting measurements against time (the day). A trend line can then be fitted to the plotted data and a significance test applied (Chassan, 1979). However, the number of consecutive days on which data would need to be recorded for statistical analysis may be greater than the majority of respondents are prepared to tolerate (Whitton, 1977).

Verbrugge considered 19 health diary studies carried out between 1940 and 1980. Only 7 used
diaries as a primary data source; the others used them as a methodological check on other health measures, or as an aide mémoire for subsequent interviews. Between 4 and 6 weeks seems to be the maximum period for which people will maintain an accurate diary: beyond this the drop-out rate rises and the volume of recorded data drops through respondent ‘fatigue’ (Mooney, 1962, quoted by Verbrugge, 1980). Most studies require respondents to provide information only for those days on which symptoms occur, with the risk that some minor complaints will be dismissed as not worth recording, and that illness behaviour occurring on these days will also go unreported. Conversely, subjects may become so sensitized to their own health by the daily self-assessments that changes occur in their illness behaviour. They may begin to discuss their health more often with family and friends; they may become alarmed by the frequency of a symptom of which they had been hardly aware.

As a check on the influence of diary-keeping on subjects’ behaviour, detailed background data on their recent state of health and illness behaviour should be collected during an extensive interview. Measures have been developed to assess individual ‘predisposition’ to various forms of illness behaviour, such as dependence on the doctor (Dunnell & Cartwright, 1972), and perceived locus of control of health (Wallston & Wallston, 1978). The diary should not be treated as an independent source of longitudinal data on illness behaviour; various predisposing factors have been shown to have a contributory effect, particularly on physician utilization (e.g. Gurin et al. 1960; Andersen & Laake, 1983; Dean et al. 1983; Gortmaker et al. 1982).

The diary in general practice research
Health diaries seem to be particularly suited to observing the ‘unique clinical content of general practice’ (Freer, 1980), with its variety of presenting complaints, psychosocial problems, and underlying pathology. Indeed, it is in this setting that most diary studies have taken place, with respondents selected from a practice or health centre register.

Most studies have been designed to establish the prevalence of health problems among those with access to a health facility and so data on the family unit rather than the individual have been recorded (Gortmaker et al. 1982; Roghmann & Haggerty, 1972; Alpert et al. 1964; Robinson, 1971). In most cases women have been recruited as diary-keepers, presumably for their greater awareness of the health of all family members and for their decisive role in the illness behaviour of their children. The studies of most relevance to the present paper are those which use personal rather than family diaries, in particular those of women (Beresford et al. 1977; Scambler et al. 1981; Freer, 1980). Only with individual-level data is it possible to adopt single-case methods, and to measure the predisposing variables contributing to the individual’s illness behaviour.

Previous health diary studies have explored to some extent the relationship between background, predisposing or mediating variables, daily events (both external and internal) and illness behaviour. The common elements which underly these studies are represented in Fig. 1. The nature of relationships between A and B variables and their influence on behaviour remain to be more fully elaborated. Although diary data have drawn attention to the lack of consistent response within a sample to the occurrence of similar symptoms, there is little explanation for intra-subject variability. The present author is engaged in a general practice study designed to explicate this variability. The pilot stage described below demonstrates the methodology and some of its pitfalls.

Background and objectives
The aim of the pilot study was to explore both predisposing (social and personality) variables and daily stresses or need variables (internal and external events) which might have the strongest associations with illness behaviour. More precise definitions of these two types of variables needed to be developed for the main study. There was also an important methodological objective:

(i) to test the feasibility of applying the method of self-controlled daily self-report among general practice patients using a simple health diary;

(ii) to demonstrate, by means of simple graphical presentation, covariations in daily symptom reports, self-assessments of health and self-reported illness behaviour in a series of general practice patients with identified psychiatric morbidity;

(iii) by collecting extensive background information through personal interview, to construct
measures of 'predisposing variables' for use in combination with the daily self-reports ('need' variables) in a model of illness behaviour.

**METHOD**

*Design and sample*

The single-case design is the most appropriate method to explore intra-subject variation over time. The need to monitor the impact of small variations in health and the occurrence of events calls for the use of daily recording; self-report on a structured and predetermined set of indices is the only feasible method to apply with a non-institutional sample.

The respondents were recruited from among a group of patients with a high rate of general practice consultations: women with emotional or psychological problems. The enhanced rate of consultations by women, particularly in the age-group 20–45, is well established (e.g. Morrell & Wale, 1976; Gurin et al. 1960). After controlling for demographic, attitudinal and health status variables, a positive relationship has been found to exist between psychological distress and the use of primary care services (e.g. Tessler et al. 1976). As noted earlier, stress has been implicated indirectly in the greater use of medical care facilities via its impact upon illness (Meyer & Haggerty, 1962) and in heightened sensitivity to symptoms (McKinlay & Dutton, 1974). Whatever the role of stress in illness behaviour, it is commonly held that psychologically distressed individuals use medical services disproportionately (Cooper, 1964; Kellner, 1963; Shepherd et al. 1966; Roghmann & Haggerty, 1972).

Two general practitioners, in partnership within a large health centre in South West London, agreed to take part in the pilot study. The recruitment method agreed with the doctors was for them to identify women consulters between the ages of 20 and 60 years, whom they believed to be suffering from minor affective disorder, irrespective of presenting complaint. After explaining to potential respondents that a survey of everyday health and illness was underway at the surgery, those eligible were invited to take part in a brief interview with the research worker.

Assuming that the broad age band and expected frequency of consultation would bring in at least one potential respondent at each surgery, the author was at first present at the health centre during surgery hours. The rate of recruitment proved to be too low for this method to continue, so that it was agreed that the GPs would telephone the research worker during a consultation with a potential respondent. An arrangement was then made with the patient for an interview within a day or two.

At the interview, respondents first completed the 30-item General Health Questionnaire...
(GHQ) (Goldberg, 1972, 1978), a self-completion questionnaire designed to screen for likely cases of psychiatric morbidity in the general population. Those with a score of 4 or more (probable cases) were then asked to take part in the extensive interview. This interview included the administration of the Clinical Interview Schedule (Goldberg et al. 1970), the second stage of the screening procedure designed to validate the GHQ and to provide opportunities for rating the severity of 10 pre-selected psychological symptoms and 12 abnormalities manifest at interview. Respondents were also asked to rate their present health, and to describe any health problems and actions taken, recent consumption of medications, medical consultations, health behaviour (including smoking and alcohol consumption, diet and exercise). They were asked whether they had experienced any of 21 listed symptoms or complaints (derived from Dunnell & Cartwright, 1972) in the last 7 days. Detailed questions on relationships within the family and household were asked. If relevant, the respondent’s attitudes to her marriage were discussed. Questions on friends and confidants included details of those with whom they discussed health and personal problems. Finally, details were recorded on problems in housing, finance, employment and any other areas of individual concern. Each respondent was asked whether she would be willing to complete a 28-day health diary, which was explained to her in detail.

The diary
The first item was an assessment of the respondent’s day in general, along a 5-point scale running from very good to very poor. They were then asked whether they had been able to carry out all their normal activities that day. A 5-point self-assessment of health followed, comparable with those used in a variety of other studies on subjective well-being (see Murray et al. 1982). There was then space to write in any symptoms or health problems they had experienced in the past 24 hours, together with any action taken for each problem. Details of any medications consumed were recorded. The final item on the first side of the page was a note of anything which had bothered or upset them that day.

The second side comprised a list of 21 symptoms or complaints, with a choice of 3 boxes for each item to denote whether the respondent had experienced the problem severely, slightly or not at all. The items, taken mainly from the list of ‘everyday complaints’ used in their community health survey by Dunnell & Cartwright (1972), include both somatic (e.g. feeling sick or vomiting, sore throat, headache, constipation or diarrhoea) and psychological complaints (e.g. feeling irritable or bad-tempered, feeling sad or depressed, feeling nervous or jittery, having difficulty getting to sleep).

Respondents were contacted by the research worker towards the end of the 28-day recording period and an appointment was made for collection of the diary and a brief follow-up interview. At the follow-up, the respondent again completed the GHQ and the research worker enquired about any changes in circumstances or health since the last visit.

RESULTS
Twenty-four female patients were referred to the research worker by the general practitioners. Contact was made with 22 of these, of whom 18 were interviewed at length and agreed to complete the health diary (the remaining 4 were excluded because 3 had a negative GHQ score at the time of interview, and 1 respondent’s command of English was too poor for her to take part).

Of the 18 who began the health diary, 14

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completed and returned the document; one was too depressed after one week to continue, and the remaining 3 failed to respond to letters requesting a second visit by the research worker or were out when visited on a number of occasions.

Some of the characteristics of the 14 diarists are shown in Tables 1 and 2. Although daily reports from the 14 diaries are to be considered as individual-level data, details collected at the initial interviews show a variety of demographic characteristics, and a substantial degree of chronic ill-health and social problems. All were found to have affective symptoms on the Clinical Interview Schedule, ranging from mild to severe.

**Diary data**

Ten respondents had no symptom-free days during the month of recording; the others recorded only 1, 2, 7 and 8 days without symptoms. Clearly, the number, nature and the severity of these complaints will vary from one individual to another and from one day to another in the same individual. Results will now be treated on a single-case basis as a means of illustrating themes emerging from the pilot study, with a brief vignette of the respondent.

**Predisposing and acute need variables and illness behaviour**

The association between a high level of acute distress and a high rate of consultation is clearly demonstrated by the diary of Mrs D (see Fig. 2). A mother of 3 in her late 20s, she assessed none of her 28 days as good, either in health or in general terms. On all but day 15 her assessment of her health and of the day in general were the same (thus only one white area appears on this histogram). A frequent attender at the surgery (10 times in the 12 months preceding the diary), she was suffering from severe anxiety symptoms, including dizziness and panic attacks, which seemed to be the culmination of chronic marital and financial problems and a rare venous condition which she believed threatened her life. In caring for 3 children under 6 years of age she had little support; although a local girl with a close relationship with her elderly mother, she considered herself to have no one in whom she could confide. Her illness behaviour during the month was at an exceptionally high level: she consulted her GP 5 times, tried and rejected a number of prescribed medications, and reported herself unable to carry out her normal activities on 19 days because of her health. Her diary shows the unremitting pattern of her symptoms: faintness and dizziness were rated as severe on 27/28 days; irritability as severe on 24 days; exhaustion, nervousness, sleep problems and headache were constant throughout the 4 weeks and frequently rated as severe. The only one of the 21 listed symptoms she did not experience was sore throat. Mrs D was referred by her GP for psychiatric consultation and during the last week of the diary she was awaiting an appointment. Her health, and in particular her psychological symptoms, deteriorated during the course of the diary. The fact that Mrs D rated her health below average on only 16 days, despite her severe symptoms, demonstrates the value of the single-case approach: Mrs D’s self-rated ‘average’ health would be rated as ‘very poor’ by most other women of her age.

The relationships between some of the diary variables are presented graphically in Fig. 2.1 As a contrast to the diary of Mrs D, Mrs C showed an improvement in health and a reduction in illness behaviour as the month progressed (see Fig. 3). Mrs C is 25 years old, married with a 6-year-old child. Her marriage to

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1 The ratings (0–2) of each symptom have been added to give a daily ‘symptom severity score’ together with the number of symptoms recorded that day. For example, if a respondent recorded 3 symptoms and rated all as ‘severe’ her severity score would be 6; if she rated 2 as slight and 1 as severe her severity score would be 4 for that day.
a man from a very different cultural background has been unhappy for some time and she has often sought the advice of the general practitioner during times of marital stress. She feels that her divorced parents burden her with their problems, and she sees herself as isolated, often lonely and unsupported emotionally. She had consulted her GP 14 times in the previous 12 months, and had been treated for depression. Unlike the other diarists, Mrs C reported 9 symptom-free days, and no single complaint was recorded on more than 12 days. There was one clear episode of depressed mood lasting for about 9 days, immediately preceding a menstrual period. During this time she reported herself unable to carry out her normal activities, and also
Health diaries in general practice

Self-assessment of health and the day in general

Symptom severity score and no. of symptoms

Illness behaviour

Unable to carry out normal activities

Medication taken:
1. Prescribed
2. O.T.C.

GP consultation

Fig 3. Relationship between some of the diary variables for Mrs C. * GP initiated consultation.

recorded serious family rows (one with her father ending in physical violence). She took a prescribed antidepressant drug on 13 days, although only twice during the 9-day episode of acute depression. On the other 11 days on which she took this drug, she reported few, if any, complaints. She described herself as being ‘very up and down’ in mood, a description borne out by her diary. Like Mrs D, her problems seemed to be exacerbated by the absence of a supportive social network and, in particular, of a close confiding relationship. Marital and other family relationships were closely associated with Mrs C’s illness.

In the next two cases, health problems had become chronic and the patterns of illness behaviour so well established that the diaries failed to show change.

Mrs K and Mrs L were both aged around 50 years with long-term marital problems. Both had problems with their older children, involving criminal behaviour, and both reported having no one in whom they could confide or from whom they received any support. They had consulted the general practitioner 10–16 times in the past 12 months. Their prevailing psychological symptoms of depression, anxiety, sleep disturbance and aches and pains did not vary sufficiently for...
any associations to be found with illness behaviour. Indeed, both respondents took prescribed medication each day and seldom assessed their health or the day in general as below average.

However, in the case of Mrs A, the diary does show the influence of an acute illness episode against a background of chronic symptoms. A mother of 6 young children, Mrs A regarded herself as friendless and isolated, with no practical or emotional support from her husband. With a family history of severe coronary disease, Mrs A herself had suffered recurrent deep vein thromboses during her pregnancies, and was currently in rather poor health. She had consulted her GP 10 times in the previous 12 months with a variety of complaints. Two months before interview she had been involved in a road accident and had residual head and leg pains for which she was taking prescribed analgesics. Mrs A recorded no symptom-free days, and at some stage reported herself as suffering from 18 of the 21 listed symptoms. Exhaustion, headache, nervousness, irritability, pain in limbs, sleep disturbance and depression were her most frequently reported symptoms. Against this background of chronic psychological complaints, Mrs A reported an episode of acute gastro-intestinal symptoms lasting for 4 days and leading to the one medical consultation during the month. During this episode, she evaluated both her health and the day in general as ‘very poor’, while for the remainder of the month her self-assessments were either ‘good’ or ‘average’, despite her chronic symptoms.

Other cases illustrate the relationship of ‘new’ symptoms with illness behaviour. When a respondent is already suffering from severe self-assessed psychological symptoms, a new complaint, of an apparently less disabling nature, can lead to medical consultation. Mrs G, aged 27 and with 3 children under 4 years of age, had been suffering from post-natal depression for 4 months, declining both medication and specialist psychiatric treatment. She reported experiencing 16 of the 21 listed symptoms at some time during the month, with exhaustion and depression on all but the last day. On 16 days she reported herself unable to carry out her normal activities.

She consulted a doctor twice during the month: once for a stiff neck, and on the second occasion for a sore throat while away from home on a family holiday. She received antibiotic medication for the second complaint which she took as prescribed. Her daily reports during the holiday suggest a time of increased stress, with marital disharmony and irritability with the children. This respondent, a trained nurse, was prepared to seek medical intervention in the form of drugs for her physical symptoms but not for her self-acknowledged depression.

DISCUSSION

Fourteen case studies, involving an extensive exploratory interview, the administration of the Clinical Interview Schedule and the completion of a 28-day self-report diary, were conducted as a pilot study. The discussion of these cases will take the form of a methodological critique and an appraisal of the nature of predisposing and daily need variables included in the pilot study.

(i) Study design

A fundamental problem of the design lay in sample selection. The majority of patients referred by the general practitioners were suffering from chronic and unremitting symptoms which showed little variation in severity from day to day. The expected covariation of illness behaviour with daily symptom changes could not be found in such cases. Not surprisingly, the doctors referred to the sample those patients who were well known to them because of their frequent attendances and who were known to have psychosocial problems. For the main study, respondents with more acute psychological symptoms will be recruited, since daily variations in symptoms would be more likely. Those with less chronic ill-health are less likely to have become set in particular patterns of illness behaviour, such as the daily consumption of medication or regular medical consultation.

Two of the cases cited in this paper (Mrs A and Mrs G) show the influence on illness behaviour of an acute symptom episode, of whatever degree of severity, against a background of chronic psychosocial problems. The association in both these cases between the onset of new physical symptoms and a visit to the doctor suggests either that the additional health problems proved
too much to cope with unsupported, or that the respondents considered physical illness more appropriate to medical intervention. The occasion for selection of respondents, during a consultation with the general practitioner, probably served to reduce the amount of self-initiated illness behaviour during the diary period. All had received diagnosis, reassurance, prescription for medication, results of tests or a letter of referral to a hospital consultant. Their illnesses had thus been ‘sanctioned’ by the doctor and, to some degree, all respondents had been confirmed in the ‘sick role’ (Parsons, 1958) and probably considered themselves entitled to take extra rest, to down rate their health or in other ways to take their symptoms more seriously. The keeping of a health diary may have become part of their sick role behaviour simply because the doctor had asked them to take part in the study at a time when they had presented themselves as sick. Some respondents seemed to believe that the diary was part of their therapy: ‘Dr X thinks it might help me if I take part in this survey.’ In the main study, efforts will be made to dissociate the diary study from the sick role: respondents will not be recruited at the time of consultation, but instead on the basis of self-completion postal questionnaires sent at random to patients on the practice list. It is hoped that this new emphasis on acute variations in health will improve the diary completion rate. The drop-out rate from the pilot stage may have resulted from the ‘fatigue’ engendered by the daily recording of chronic psychosocial problems. Several respondents did comment on the feeling of despondency created by their daily symptom reports.

(ii) The diary
It became apparent that offering respondents only 3 possible categories for daily symptom ratings (absent, slight and severe) resulted in insensitive measurement; 2 levels of severity cannot adequately reflect the daily variations in the experience of symptoms. A respondent who chose the rating ‘severe’ for a headache, for instance, was unable to increase the severity rating next day when the headache had become more troublesome. In analysing the data it is impossible to judge whether a ‘severe’ symptom remained unchanged throughout the month or became progressively worse. To resolve this problem, a visual analogue scale of 10 cm will be used for the self-ratings in the main study. The rating is made by placing a vertical line along the scale to denote the relative ‘strength’ of each symptom. The method provides much greater sensitivity and allows a variety of ‘scoring’ methods for the research worker – for example, the number of centimetres may be measured with a ruler to derive each symptom score; or each visual analogue scale may be divided into 5 equal sectors after completion and the subject’s rating placed on a scale from 0 to 5 (see Huskisson, 1983).

A second problem in the daily self-ratings arises from the difficulty in defining ‘severity’. Each symptom will have a number of dimensions which may change in intensity from day to day – for example, frequency, duration, variability, painfulness, disruptiveness. In requiring a rating of severity we are expecting the respondent to make a multidimensional assessment. The literature on pain research (see Melzack, 1983) provides sufficient evidence of the linguistic dangers in trying to measure phenomena which are essentially subjective: ‘Pain is a private matter’ (Fordyce, 1983) which exists only because the sufferer considers it to be a problem. Since we cannot measure the strength or nature of the stimulus, we can only record the subjective response to it; in other words, we can ask only ‘how bothered is the subject by whatever it is he is experiencing?’ The implication of the pain research literature is that attempts to measure severity should be avoided. In the main study, respondents will be asked to express how bothered they are by each symptom, using the visual analogue scales. Since single-case analysis is to be used, it poses no problems that one individual’s experience of discomfort cannot be compared with another’s. We shall be comparing today’s discomfort with tomorrow’s in the same subject. Opportunity will be provided for each respondent to add her own additional symptoms to the pre-selected list, and to rate them on a visual analogue scale.

It was decided to retain the pre-selected list of symptoms for the main study rather than to attempt to construct ideographic symptom profiles. These were first introduced by Shapiro (1961), who constructed individual symptom
profiles to evaluate treatment over time. This method would prove far too cumbersome for a self-completion health diary, since the incidence of new symptoms would require amending the diary during the period of completion. It is a method suited to clinical research among in-patients, not among members of the community at large.

The General Household Survey experience (see Cartwright, 1983) has been that respondents record more symptoms when provided with a checklist. When asked to list their own symptoms, many are inhibited by their unfamiliarity with medical terminology. They may be reluctant to express in their own words some of the more 'personal' health problems.

The dependent variables, illness behaviour, will also be measured as a pre-selected list to include time off work, drug consumption, bed rest, resting more than usual, making an appointment to see the doctor, consulting another health worker, lay consultations, and purchasing medications. It is hoped that this will increase the rate of recording beyond that of asking the respondent what they did about their symptoms.

(iii) Predisposing and acute need variables

A small-scale pilot study such as this can only suggest the inclusion of variables for measurement in the main study. Among the 14 cases there was evidence of the factors thought to predispose to psychological symptoms and to illness behaviour. The most apparent was the lack of a close confidant in at least 10 cases, a factor of significance in the development of depression (Brown & Harris, 1978) and in the severity of psychological symptoms (Miller & Ingham, 1976). Indeed, Lin et al. (1979), in a community study of the relationships between social support, stressful life events and the incidence of psychiatric symptoms, found that the contribution of social support to the prediction of symptoms was greater than that of life events.

It is beyond the scope of this paper to enter the debate on the nature of the relationship between stressors, social support and the development of illness. Thoits (1982) provides an extensive review of the evidence for the role of social support as a buffer against stressful events, concluding that the majority of studies suggest that a combination of low social support with one or more life events significantly increases symptoms of physical or psychological distress. However, she remains critical of the failure to formulate a precise, conceptual definition of social support and of the failure of most studies to develop valid or reliable indicators of the concept. In the main stage of the present study a standardized Social Problems Questionnaire (the SPQ), which has been developed and tested for reliability among general practice populations (Corney et al. 1982; Corney & Clare, 1985), will be used to assess the level of social support, of both an intimate and more casual kind, in addition to measuring the extent of problems in housing, income, childcare, marriage, relatives, employment, leisure and social contacts. The multiple social problems reported by some respondents, in particular severe marital disharmony, suggests the importance of these factors in prolonging psychological illness. Since most respondents had symptoms of long duration, it was not possible to explore the association between social problems or life events and the incidence of symptoms.

Cobb (1976), in emphasizing that social support is an important component of the therapeutic process, believes the key factor to be its protective value. He explores the biological and social pathways to these effects, showing, for example, that lack of support often leads the patient to drop out of treatment or in other ways to fail to comply with therapeutic regimens (Sackett & Haynes, 1976). This is one possible factor in prolonging the chronic episodes of depression evident in some of the pilot cases. The conceptual model of daily variations in health and illness behaviour will be applied in the design of the main study in much the same form as it was in the pilot study. Predisposing factors, such as the aspects of personality listed earlier and chronic health and social problems, interact with daily need variables to produce illness behaviour. At some point (perhaps the term ‘threshold’ might be applied), the balance of forces made up of predisposing and daily need factors no longer remains in equilibrium and the individual seeks external help for the discomfort. Zola’s (1973) conceptualization of an ‘accommodation both physical, personal and social’ to health problems is most appropriate. When this breaks down,
because some new event or symptom has occurred to challenge the individual’s ability to cope, help is sought.

CONCLUSION

The experience of this small-scale pilot study confirms the view that the self-controlled self-report health diary is an appropriate method for the study of psychiatric morbidity in general practice patients. Definitions of both independent and dependent variables have been refined by the findings of the pilot study, and the extensive background interview will include reliable and validated measures of both social problems and relevant personality attributes, or predisposing factors.

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