British Journal of Psychiatry (1985), **146**, 132–139

Predicting Improvement in Patients with Non-Endogenous Depression

GORDON PARKER, CHRIS TENNANT and ILSE BLIGNAULT

Summary: Forty-three patients with non-endogenous depressive disorders were assessed shortly after psychiatric referral, and reassessed at six and at 20 weeks. The pattern of improvement appeared to be set shortly after the initial consultation, but could be most clearly predicted by the degree of improvement at the end of the third week. Key baseline factors predicting a more marked improvement at each follow-up were a more severe depression, the break-up of an intimate relationship, and the presence of weight loss. Positive life events occuring after the initial assessment predicted improvement at six and at 20 weeks, while the presence of a neutralising event (which negated an earlier threatening life event) predicted improvement at 20 weeks.

In a review of clinical trials of treatments for patients with a depressive syndrome, Weissman (1979) noted that there are not "sufficient data yet to say which of the psychotherapies should be used, which patients will recover quickly with no treatment, or which sub-type of depressive disorder will benefit from drugs and/or psychotherapy". Such a comment is likely to apply less to the biological depressions (with their imputed hereditary and biochemical bases) than to those disorders diagnosed generically in the past as 'neurotic depression'. Increasing recognition that the latter term is a nosological rubric encompassing an heterogeneous group of depressive disorders (Akiskal *et al*, 1978) including transient depressive reactions, chronic depressive states, and acute depressions superimposed on chronic depressive disorders, points to a key factor which obscures clarification of the course of these disorders. Furthermore, while many depressive illnesses remit rapidly and spontaneously, it remains unclear to what degree rapid remission is a consequence of the disorder or of the particular therapy – an important issue when rapid remission is a substantial phenomenon even in untreated depressives. For instance, data from controls in 30 studies assessing tricyclic antidepressants showed that about one-third of the untreated subjects were recovered or considerably improved over trials averaging a month (Appleton & Davis, 1980), and a meta-analysis of case-control studies of treatments for neurotic depression recorded considerable improvement over a follow-up period of six weeks in the untreated control group (Quality Assurance Project, 1983).

While the DSM-III and ICD 9 classificatory systems both include chronic and remitting depressive syndromes, it remains to be established that diagnosis and clinical features allow the course of these depressive disorders to be predicted with confidence. Several clinical features associated with improvement have been suggested; however, these studies have tended to include all types of depressive disorders or other neurotic disorders in addition to depression, in the context of widely varying treatment modalities including psychotherapy, antidepressant medication, and ECT. A better outcome has been associated with younger age (Mann *et al*, 1981), both with more severe (Keller *et al*, 1982a) and with less severe depressions (Mann *et al*, 1981; Rounsaville *et al*, 1981), with fewer previous episodes (Keller *et al*, 1982b; Kovacs *et al*, 1981), with the occurence of recent threatening and subsequent neutralising life events (Tennant *et al*, 1981), with recency of onset (Keller *et al*, 1982b; Tennant *et al*, 1981), with better material circumstances (Huxley *et al*, 1979), with family support (Mann *et al*, 1981), and with personality factors such as low neuroticism (Weissman *et al*, 1978).

In an attempt to define predictors of improvement in the non-endogenous depressive disorders, we have commenced a series of longitudinal studies of both non-clinical groups and of patients receiving psychiatric intervention. The first study, reported here, examines predictors of outcome in patients receiving psychiatric assessment together with psychotherapy and counselling for an open-ended period. Data from a large sample of psychiatrists in clinical practice, from an expert committee, and from a meta-analysis of the literature suggested that such an approach is the method of choice for the treatment of neurotic depression (Quality Assurance Project, 1983).

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

In the search for outcome predictors, we cast a wide net in assessing possibly relevant characteristics of the disorders, of the patients, and of their social environment. To reduce the likelihood of outcome being determined by physical treatments, only those non-endogenous depressives who were not receiving antidepressant medication or ECT were to be included.

Method

(i) *Subjects:* Some two dozen psychiatrists were requested to refer patients, following initial consultation for a current episode of depression, who were diagnosed clinically by them as having a depressive disorder, neurotic or reactive in type. Further inclusion criteria were: no antidepressant medication of ECT in the preceding three months, the unlikelihood of such treatments during the longitudinal study, and a score of 10 or more on the Beck Depression Inventory (Beck *et al*, 1961). Thirteen psychiatrists referred 51 patients to the study. If, at the baseline assessment, there was any doubt about the diagnosis, the patient was assessed independently by the first author, who assessed the clinical and family history to confirm or reject the initial diagnosis. Subsequently, three patients requiring antidepressants, one requiring ECT, one whose diagnosis was revised (on the basis of clinical features) to endogenous depression, and three who did not attend the second interview were disqualified, leaving a sample of 43 patients. Most patients received either psychotherapy or counselling from the psychiatrists for varying durations, although several were seen only for an initial consultation.

The mean age of the sample was 31.5 years, and there was a female preponderance, only seven patients being male. A shortened version of the Present State Examination (PSE) (Wing *et al*, 1974; Wing & Sturt, 1978) was administered by a trained and reliable rater (Parker & Blignault, 1983). The CATEGO classification assigned 53% as 'neurotic depression'; 33% as 'retarded depression'; 12% as 'anxiety state', and one patient as possibly manic (although the last was judged clinically as a recovering depressive, somewhat euphoric about his marked improvement).

(ii) *Assessment of the subjects:* The subjects were interviewed by the third author at the baseline assessment and re-interviewed at six weeks; the 20-week data were collected by a postal questionnaire. On each occasion, severity of depression was assessed principally by the Zung scale (Zung 1964). At baseline and every sixth day until and including the six-week assessment, the subjects were asked to complete a Lubin adjective check-list; this series of equivalent forms (Lubin, 1965) was used to overcome any practice effect associated with repetition of a single inventory, with these forms being collected on three separate occasions.

Previous episodes of depression and their treatment, together with present episode and socio-demographic details were assessed by a semi-structured interview. We designed a pre-coded interview schedule to assess a hierarchy of current social relationships (e.g. intimates, relatives, friends) quantitatively and qualitatively, as well as the degree to which those social supports had changed since the development of depression.

A complete life events history, using the semi-structured interview and rating procedure described by Brown & Harris (1978), was recorded by the trained interviewer for the 12 months preceding the onset of depression, or for the 12 months prior to interview if the depression had lasted longer than a year. In this procedure, vignettes of each event are obtained by the interviewer so as to include the social context in which the event occurred, allowing a sensitive index of the stress that the subjects may have experienced. Several ratings of the 'threat' of life events were then made on a 4-point scale by the second author, who had been trained by Brown & Harris and for whom established reliability of ratings had been demonstrated (Tennant *et al*, 1979). In the subsequent analyses, to avoid circularity issues, only those events were included which were considered to be independent of, and unlikely to be a consequence of depression.

The self-report scales assessed personality traits of possible relevance to the onset and course of depression, and included the Eysenck Personality Inventory (Eysenck & Eysenck, 1964); a Dysfunctional Attitude Scale developed by Weissman (1980); the Rosenberg (1965) Self-Esteem Scale; a 9-item scale (Hrycenko & Minton, 1974) involving the 'personal control' sub-scale items derived from the locus of control scale developed by Rotter (1966); and the Parental Bonding Instrument (PBI), a measure of perceived parental care and overprotection (Parker *et al*, 1979). Since trait personality measures are likely to be subject to biases introduced by state disturbances (Kendell & Di Scipio, 1968), patients were asked to complete the personality measures as they regarded themselves generally, rather than currently, which was suggested as a useful strategy to reduce any bias accruing from state disturbance.

At the six-week follow-up, further details were obtained on the depressive disorder and several of the personality measures re-administered; all life events occurring in the follow-up period were also assessed, and objective ratings made as for pre-baseline events. The first of these comprised a rating of the seriousness of 'threat' of all life events, while two other ratings judged more 'positive' life events in this period. One was a rating of whether an event could be considered a 'neutralising' life event. Such events were defined *a priori* as any life event which occurred during the follow-up period which caused minimal or no threat to the subject, a threat rating of 3 or 4 according to the Brown & Harris (1978) criteria, *and* which substantially negated or counteracted the impact of an earlier threatening event that had been reported during the first assessment period. To qualify as a neutralising life event, such an event had to reduce the impact of an earlier severely threatening event (rating 1) to one of at least mild threat (rating 3), or alternatively reduce a moderately threatening event (rating 2) to one of no threat (rating 4). In other words, a substantial degree of threat was eliminated by the occurrence of such a neutralising event. Finally, a dimension of positive life events was rated. All

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

events occurring in the follow-up period were categorised as having either 'no positive' effect (most of these would have been threatening life events), having a 'highly positive' effect, or a 'moderately positive' effect; this concept of positivity is independent of that of the 'neutralising' effect. In most instances, neutralising events could be considered positive, but the reverse is not always true, since to qualify as a neutralising event, a positive event would also have to be specifically linked with a threatening life event, occurring in and rated for the pre-baseline period.

Results

At baseline, the 43 subjects returned mean scores of 22.4 (SD 8.6) on the Beck scale, 51.2 (SD 7.3) on the Zung scale, 16.5 (SD 6.3) on the initial Lubin check-list, and 18.2 (SD 7.9) on the PSE total score, while all bar one rated at or above the 'threshold level' for a clinical case on the PSE. While 65% reported the onset of depression in the preceding 12 months, the mean duration was 2.2 years and the median 6.7 months. Two-thirds reported an earlier significant episode of depression, 30% had made a suicide attempt in the past, and 26% had had previous treatment by a psychiatrist. At interview, 14 were in-patients and 29 out-patients; 30% had received anxiolytic, and 12% sedative medication before referral to the psychiatrist. All bar five subjects had been born in Australia or the UK.

Mean scores on the several personality measures were: EPI Neuroticism, 17.0; EPI Extroversion, 13.3; EPI Lie, 1.6; Dysfunctional Attitude Scale 152.6; Self-Esteem, 3.2; Locus of Control, 4.4. On retest at six weeks, scores on the Dysfunctional Attitude Scale had dropped to 137.1 ($t = 4.61$, $P < 0.001$), but scores on the other personality tests had not altered significantly. While these results and comparative data will be considered elsewhere, they can be summarised as suggesting that the sample scored as more neurotic, and as having a lower self-esteem, a more external locus of control, and higher dysfunctional attitudes than non-clinical groups.

In the six-weeks interval between baseline and initial follow-up, 16 patients reported highly or moderately positive life events, and eight patients a neutralising event. The mean Zung scale score at six weeks was 43.6 (SD 10.2). Thirty-four patients (79% of the sample) responded to the 20-week assessment, and the mean Zung scale score at that time was 37.3 (SD 9.6); 14 (41%) had continued to receive psychiatric treatment since the six-week follow-up.

Improvement in the sample was calculated by comparing follow-up Zung with baseline Zung scores, percentage improvement being determined after subtracting 20 from each of the Zung scores (as the 20 individual items on the Zung scale have a minimum score of one). It was calculated that the whole sample had improved by 24% at six weeks ($t = 5.25$, $P < 0.001$) and by 45% (at least for those responding) at 20 weeks ($t = 6.23$, $P < 0.001$). Improvement at both six and at 20 weeks was predicted significantly by the drop in scores on the Lubin scales on each occasion of testing, as early as the first assessment on the sixth day ($r = 0.52$ and 0.44 respectively) but most clearly by the third assessment on the eighteenth day ($r = 0.60$ and 0.62 respectively).

The degree to which improvement (Zung difference scores) might be predicted by study variables was examined in a series of screening analyses, and assessment made of all study variables for which adequately distributed data had been obtained, including individual items on the Beck, Zung, and visual analogue scales. Zung scores at baseline correlated significantly with improvement at six weeks ($r = 0.29$, $P < 0.05$) and at 20 weeks ($r = 0.61$, $P < 0.001$). As difference scores can produce an artefact, with the more depressed subjects tending to improve the most, percentage improvement scores were calculated; weaker relationships between baseline scores and percentage improvement at six weeks ($r = 0.17$, NS) and 20 weeks ($r = 0.49$, $P < 0.002$) were shown. Thus, whether difference scores or percentage scores are examined, the more depressed patients at entry were most likely to show greater improvement, and most particularly at 20 weeks. No association was suggested, however, between duration of depression and improvement at six weeks ($r = -0.004$) or at 20 weeks ($r = 0.09$). Age was not significantly related to improvement at six weeks, but older subjects were more likely to have improved at 20 weeks ($r = 0.34$, $P < 0.025$). Further analyses suggested that improvement, both at six and at 20 weeks, was not clearly related to the sex, occupation, or marital status of the patient, to in-patient status, or to any of the personality variables. There was a weak curvilinear relationship linking neuroticism scores and improvement, with the more neurotic patients being somewhat more likely to improve considerably or to worsen, but the trend was not significant.

Multivariate analyses were then used. This was firstly to assess the relevance of baseline variables as predictors of improvement; raw and derived variables were entered into the analyses if their relevance was suggested in the screening analyses. Derived variables included composite variables whereby a clinical feature (such as weight loss) was assessed by summing the appropriate items from the depression inventories (in this instance, Beck item 19 and Zung item 7). As another example, 'functional parenting' scores were calculated by subtracting the relevant parental care score from the relevant parental protection score, so that a highly caring and non-overprotective parent would produce a high negative score. Predictors which were examined included socio-demographic variables (age, sex, social class, migrant status), social support variables (intimates, relatives and friends; and any change since the onset of depression); clinical features of the present episode (duration, Beck and Zung items suggested in univariate analyses); features of previous depressive episodes (number of episodes, treatment or not, medication or not, suicide attempts); personality variables (EPI neuroticism and extraversion, dysfunctional attitudes, self-esteem, locus of control) and earlier parental experiences (PBI scores).

In all the regression analyses, a stepwise inclusion procedure was used, the imposed conditions being that ten predictor variables at most would be entered and that

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

TABLE I

Baseline predictors of improvement at six weeks – after controlling for initial severity of depression

Predictor	*Standardised Beta*	*Variance*
Initial severity of depression	.06	11.6%
Break-up of intimate relationship in preceding 12 months	.49	23.9%
Initial episode of depression	.10	7.4%
Report considerable weight loss	.30	6.2%
Born in Australia or the U.K.	.38	4.1%
Unlikely to report loss of interest in people	.39	3.8%
Report a considerable drop in libido	.34	3.6%
Report considerable self-hatred	.34	2.4%
More internal locus of control	.21	2.1%
Total variance		65.1%

a minimum F ratio value of 1.0 was required. Since an earlier analysis had established that the initial severity of depression was itself a predictor of improvement, the baseline Zung scores were forced in as the initial predictor, to control in effect for initial levels of depression and prevent spurious predictors which were correlated with severity of depression from emerging. The clearest predictor of improvement at six weeks (Table 1) was the patient reporting a break-up of an intimate relationship in the preceding 12 months. A first episode of depression, a more severe depression, the reporting of greater weight loss, being born in Australia or the United Kingdom, reporting more self-hatred and a greater drop in libido, reporting that interest in people was maintained, and a more internal locus of control were variables that explained some two-thirds of the variance in outcome.

A similar analysis was performed to assess predictors of improvement at 20 weeks. Table II lists the clearest predictors: initial severity of depression, break-up of an intimate relationship in the preceding 12 months, and reporting considerable weight loss; these three variables predicted 61% of the variance in outcome. A number of other isolated variables are not listed in the table, since in comparison to the first three variables, they explained only small percentages of the variance. Many variables, such as an internal locus of control, which had been strongly predictive in earlier analyses when the initial severity of depression had not been entered, did not emerge as relevant; this suggested that their earlier contribution was spurious, being influenced by levels of depression.

TABLE II

Baseline predictors of improvement at 20 weeks – after controlling for initial severity of depression

Predictor	*Standardised Beta*	*Variance*
Initial severity of depression	.69	33.5%
Break-up of intimate relationship in preceding 12 months	.38	15.6%
Report considerable weight loss	.31	12.0%
Total variance		61.1%

The regression analyses were repeated after adding interval predictors (e.g. life events, continuance of treatment) to the previous list of baseline predictors. Although ten patients were rated as having significantly adverse life events in the six weeks after initial assessment, the absence of such a life event was not a significant predictor of improvement. Positive life events in the six-week interval were associated with greater improvement, predicting 7.9% and 6.4% of the variance at six and at 20 weeks respectively. Neutralising events had no significant influence on improvement at six weeks, but contributed nearly 6% of the variance at 20 weeks. Ceasing psychiatric treatment by the sixth week was associated very strongly with improvement at 20 weeks, accounting for 30.2% of the variance but, not being a baseline variable, was not entered as a predictor of six-week improvement.

Figure I graphs the improvement in Zung scores over the 20 weeks. Effect sizes, which represent the number of standard deviations the distribution of scores is shifted, were calculated according to the formula: ES = ($\bar{X}$ at follow-up − $\bar{X}$ at baseline)/ SD at baseline. The ES for the whole sample was 1.90. Improvement is also charted for the sub-sample reporting the two clearest predictors suggested in the several analyses—the break-up of an intimate relationship in the preceding year and the report of any weight loss. For the ten patients positive on those two predictors, the improvement is considerable, and an ES of 3.70 was calculated. However, they could not be distinguished significantly from the sub-sample of patients negative for the two predictors in terms of duration of depression (14.9 v 18.7 months) or severity of depression (PSE total score: 23.0 v 17.7; Beck score: 25.7 v 20.3; Zung score: 55.1 v 49.7).

Those 17 patients reporting exposure to the principal variable, i.e. break-up of an intimate relationship in the preceding year, improved by 23% (ES = 1.40) at six weeks and 39% (ES = 2.34) at 20 weeks, as against

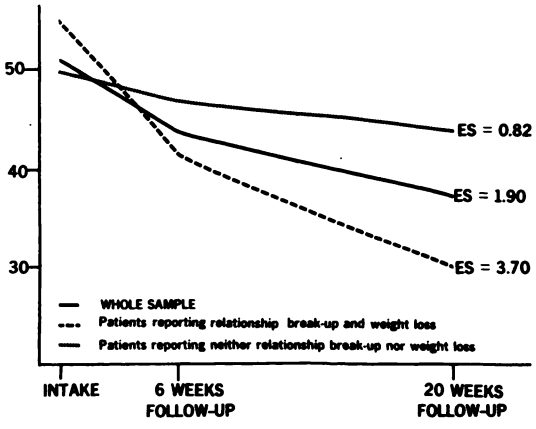


FIG. 1 Drop in Zung scale scores from baseline to follow-up assessments, with Effect Size (ES) calculations for whole sample, and for sub-samples distinguished by the presence or absence of the two key predictors.

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

improvement rates for the remainder of the sample of 9% (ES = 0.74) and 20% (ES = 1.57) respectively, despite a similar duration of depression (21 versus 29 months; F = 1.38, NS) and a similar severity of depression at entry (F ratios for Zung = 1.69, Beck = 1.21 and total PSE = 2.30, all NS). Their rapid remission is further illustrated by the finding that 86% of those reporting such a break-up of a relationship, as against 14% of the remainder (χ^2 = 4.18, P <0.05), has ceased psychiatric treatment at six weeks.

Discussion

This inquiry was ambitious in attempting to assess the relevance of a large number of variables as potential influences on the course of non-endogenous depressive disorders, in patients assessed shortly after their referral to a psychiatrist. The strategy of assessing a large number of variables runs the risk that some may achieve significance by chance. At the same time, some valid predictors may not have been isolated, or may have been minimised in this study as a consequence of their being infrequent in the present sample. Both these caveats should be respected until replication studies are carried out in larger clinical samples.

Socio-demographic characteristics of the sample have been detailed previously (Parker & Blignault, 1983) and suggest, in terms of age, female preponderance, marital status, and previous depressive experience, that it was very similar to samples of patients entered in two recently reported controlled studies (Kovacs *et al,* 1981; Di Mascio *et al,* 1979), while all but one patient scored at or above the 'threshold level' for caseness on the PSE.

Levels of depression were reduced by 24% at six weeks and by 45% at 20 weeks, the effect sizes being 1.04 and 1.90 respectively. The improvement within the sample is comparable with a published effect size for pyschotherapy for neurotic depression of 1.72 at 20 weeks, calculated by a meta-analysis of published trials (Quality Assurance Project, 1983), although the present study was essentially a naturalistic one and not a formal trial of psychotherapy. It is therefore suggested that we assessed a representative clinical sample of non-endogenous depressive patients (although, as none received antidepressant medication, the more severely depressed may have been excluded), and that their overall improvement was consistent with an international data base.

Improvement at six and at 20 weeks in a group could be predicted strongly and significantly as early as the sixth day, by improvement scores on the Lubin check-lists, but most strongly during the third week. These findings suggest that, for patients receiving psychiatric assessment and psychotherapy, the pattern of improvement is set shortly after the initial consultation.

In regard to predictors of outcome, it was found against expectation (Keller *et al*, 1982a Tennant *et al*, 1981) that there was a striking lack of simple association between improvement and duration of depression but, as only 12% of the sample had been depressed for less than a month, the sample is likely to have had few patients with ephemeral disorders. Regression analyses suggested the overall relevance of several sub-sets of predictors of outcome, and it is appropriate to consider some of them in closer detail. A strong predictor was a more severe depression and, while this confirms the common clinical belief (Hamilton, 1982) and a research report (Keller, 1982a) that the more severely ill patients respond better to treatment than do milder cases, the opposite effect has been found in some studies of depressives (Rounsaville *et al,* 1981).

The strongest predictor of improvement at six weeks, and a powerful one at 20 weeks, was the break-up of an intimate relationship in the preceding 12 months. This variable was generated from the pre-coded social support questionnaire; patients were asked: "During the past year has there been a person you have been especially close to, fond of, attached to?", and 17 patients stated that they had had such a relationship discontinued during the year. The fact that these 17 patients reported a mean duration of depression of 21 months suggests that for many, the relationship had been terminated after the onset, and possibly even as a consequence of depression. This explains why its clear relevance was not suggested by the life event analyses which, as noted above, considered only life events independent of the onset of depression. Those reporting such a life event as well as weight loss improved by 46%, in comparison with those who neither reported that event or weight loss, who improved by only 9% at 20 weeks. We have some confidence in these two predictors as, in a study of untreated community depressives (as yet unreported), these features were again the two clearest predictors of improvement at six and at 20 weeks.

The possibility is therefore suggested that patients with such symptoms are particularly responsive to psychiatric assessment and to subsequent psychotherapy or counselling. We would speculate that any capacity humans have for a 'natural' or spontaneous remission is blocked in some individuals, and that psychotherapeutic intervention may release constraints on remission, just as it does for atypical ('prolonged' or 'delayed') grief responses. This is consistent with Frank's view

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

(1961) that the main benefit of psychotherapy is an acceleration of improvement that may have accrued naturally over time.

Depressives with fewer previous episodes have been described as less likely to relapse (Keller *et al*, 1982b) and as more likely to improve (Kovacs *et al*, 1981). In this study, greater improvement at six weeks was reported by those having an initial episode of depression, but this variable failed to predict improvements at 20 weeks.

The depression inventories produced three predictors of a better outcome at six weeks in addition to weight loss: self-hatred, reduced libido, and maintaining an interest in people. It might have been anticipated that reduced libido would only be of relevance to those reporting a break-up in relationship but, when that group was compared with the remainder, no difference ($Z = 0.33$, NS) was found for the two groups in this respect.

The five non-British migrants improved less at six weeks than indigenous Australians and British-born migrants. While not a strong predictor, this variable was the only socio-demographic variable suggested; age, sex marital status, education, and occupation were unassociated with improvement.

The only personality measure predicting initial improvement was the locus of control scale, higher internal scores being associated rather weakly with a better outcome at six weeks. Any suggestion that 'internals' improve to a greater degree than externals is consistent with the view (Hrycenko & Minton, 1974) that internals are more likely to believe that reinforcements are dependent on their own effects, and therefore act on their environment so as to initiate improvement.

One of the strongest predictors of improvement at 20 weeks was the interval predictor of having ceased psychiatric treatment by the sixth week. While this could be interpreted as suggesting that psychiatric intervention is counter-productive, a more likely explanation is that those who had improved by 20 weeks had also improved by six weeks, and so had no further need of psychiatric intervention.

In considering the relevance of life events to outcome, it might have been expected in the present study that patients reporting a significant and recent life event, and thus a 'situational' or 'reactive' depression, would be more likely to improve. We assessed the relevance of life events in the months preceding interview and, while 41% of the patients scored as having one or more rated life events, it was found that the presence or absence of life events did not predict improvement at either follow-up. Several reasons for this negative finding can be suggested. Firstly, our variable rating of life events to a period preceding interview or to a period preceding onset (depending on the duration of the depression) may have confounded the analyses. Secondly, we rated only independent life events, i.e. life events that could not be consequences of the development of depression. While such a procedure has advantages in any attempt to clarify the relevance of possible causal factors to depression, it is counter-intuitive to the clinical tendency to rate all life events. Thus, if a man develops depression as a consequence of his wife divorcing him, and then loses his employment as a consequence of his depression, the clinician would tend to rate the two traumata as likely to influence the course of his disorder, while our ratings would have ignored the loss of employment as a stressor. Because of these methodological issues, it would be unwise to accept uncritically our finding of no relationship between independent life events and outcome, and we suggest that assessment of life events should not necessarily be limited to those independent of the depression.

Life events in the first six weeks after assessment, while reported by few, were of some relevance to improvement. Stressful life events in that period, which were rated as independent of the depression, did not predict outcome either at six weeks or at 20 weeks; this was against our expectation that those with stressful life events would fare worse, but this negative finding may again be a consequence of our rating method. By contrast, positive life events during the six-weeks interval were associated with a better outcome.

It seemed important to assess the relevance of 'neutralising' events, as an earlier study (Tennant *et al*, 1981) found that such events accounted for one-third of all remissions in a longitudinal study of neurotic disorders in the community. It will be remembered that a neutralising event is defined as being intrinsically positive and at least substantially negating the impact of an earlier stressful life event. In the regression analyses, neutralising events were a significant predictor of improvement at 20 weeks, but not at six weeks, suggesting that, as is generally held for antecedent life events precipitating depression (Brown & Harris, 1978), there may be a lag before they produce an effect.

A number of clinical and research implications should be noted. Firstly, the study suggests that the degree to which patients with neurotic or reactive depression will improve in the immediate term (i.e. 6–20 weeks) may be predicted by their degree of improvement in the first few weeks, and most clearly by the third week. Secondly, sets of

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

predictor variables have been isolated which allow the course of depressive disorders to be estimated. Thirdly, we have some confidence about the two key predictors isolated in this study—the break-up of an intimate relationship in the preceding year and weight loss; this is because of their consistency and because we have now replicated them in a study of community depressives not receiving treatment. Fourthly, clinicians should be alerted to the rapid remission found for the sub-group in this study reporting those features. Fifthly, as severity of illness and substantial weight loss are often regarded clinically, and supported by some studies (Prusoff *et al*, 1980) as indicators for tricyclic medication, it is of interest that these features were associated with a more marked improvement in this sample, when treatment by tricyclic medication or ECT were exclusion criteria. Sixthly, the study suggests that researchers investigating treatments for depressive disorder might do well to ensure that, after random allocation, there is a similar distribution of patients with and without the suggested key predictors of improvement; otherwise, failure to do so might produce differences in outcome more as a consequence of characteristics of the disorder than of those of the treatment. Seventhly, it remains to be established whether or not the study has elicited predictors of spontaneous remission and/or predictors of response to psychotherapeutic interactions; our study of untreated depressives (Parker & Blignault, in preparation) does not entirely resolve that issue when any assessment process associated with a research study may have had a psychotherapeutic component. Finally, the suggested key relevance of social and interpersonal issues should encourage more precise examination of these variables in subsequent research.

Acknowledgements

We wish to thank the psychiatrists for referring patients to this study, Barbara Bucknor for secretarial assistance, Jim Lemon for data analyses, and the National Health and Medical Research Council (Australia) for funding this study.

References

Akiskal, H. S., Bitar, A. H., Puzantian, V. R., Rosenthal, T. L. & Parks, W. W. (1978) The nosological status of neurotic depression. *Archives of General Psychiatry*. **35,** 756–766.

Appleton, W., Davis, J. (1980) *Practical Clinical Psychopharmacology*, Baltimore: Williams & Wilkins,

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961) An inventory for measuring depression. *Archives of General Psychiatry*, **4,** 53–63.

Brown, G. W., Harris, T. (1978) *Social Origins of Depression*. London: Tavistock.

Di Mascio, A., Weissman, M. M., Prusoff, B. A., Neu, C., Zwilling, M. & Klerman, G. L. (1979) Differential symptom reduction by drugs and psychotherapy in acute depression. *Archives of General Psychiatry*, **36,** 1450–1456.

Eysenck, H. & Eysenck, S. B. G. (1964) *Manual of the Eysenck Personality Inventory*. London: University of London Press.

Frank, J. D. (1961) *Persuasion and Healing*. Baltimore: Johns Hopkins University Press.

Hamilton, M. (1982) The effect of treatment on the melancholias (depression). *British Journal of Psychiatry*, **140,** 223–230.

Hryencko, I. & Minton, M. L. (1974) Internal-external control, power position, and satisfaction in task-orientated groups. *Journal of Personality and Social Psychology*, **30,** 871–878.

Huxley, P. J., Goldberg, D. P., Maguire, G. P., & Kincey, V. A. (1979) The prediction of the course of minor psychiatric disorders. *British Journal of Psychiatry*, **135,** 535–543.

Keller, M. B., Shapiro, R. W., Lavori, P. W. & Wolfe. N. (1982a) Recovery in major depressive disorder. *Archives of General Psychiatry*, **39,** 905–910.

—— (1982b) Relapse in major depressive disorder. *Archives of General Psychiatry*, **39,** 911–915.

Kendell, R. W. & Di Scipio, W. J. (1969) Eysenck Personality Inventory scores of patients with depressive illness. *British Journal of Psychiatry*. **114,** 767–770.

Kovacs, M., Rush, A. J., Beck, A. T. & Hollon, S. D. (1981) Depressed outpatients treated with cognitive therapy or pharmacotherapy. *Archives of General Psychiatry*, **38,** 33–39.

Lubin, B. (1965) *Manual for the Depression Adjective Check List*. San Diego: Educational & Industrial Testing Service.

Mann, A. H., Jenkins, R. & Belsey, E. (1981) The twelve-month outcome of patients with neurotic illness in general practice. *Psychological Medicine*, **1,** 535–550.

Parker, G. B., Tupling, H. & Brown, L. B. (1979) A parental bonding instrument. *British Journal of Psychiatry*, **52,** 1–10.

—— & Blignault, I. (1983) A comparative study of neurotic depression in symptomatic volunteers and psychiatric patients. *Australian & New Zealand Journal of Psychiatry*, **17,** 74–81.

Prusoff, B. A., Weissman, M. M., Klerman, G. L. & Rounsaville, B. J. (1980) Research diagnostic criteria subtypes of depression. *Archives of General Psychiatry*, **37,** 796–801.

Quality Assurance Project: A treatment outline for depressive disorders. *Australian and New Zealand Journal of Psychiatry*, **17,** 129–146.

Rosenberg, M. (1965) *Society and the Adolescent Self-Image*. Princeton: Princeton University Press.

Rotter, J. B. (1966) Generalised expectancies for internal versus external control of reinforcement. *Psychological Monographs*, **80,** (1. Whole No: 609).

Rounsaville, B. J., Weissman, M. M. & Prusoff, B. A. (1981) Psychotherapy with depressed outpatients: patient and process variables as predictors of outcome. *British Journal of Psychiatry*, **138,** 67–74.

Tennant, C. Smith, A., Bebbington, P. & Hurry, J. (1979) The contextual threat of life events: the concept and its reliability. *Psychological Medicine*, **9,** 525–528.

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press

—— BEBBINGTON, P. & HURRY, J. (1981) The short-term outcome of neurotic disorders in the community: the relation of remission to clinical factors and to 'neutralizing' life events. *British Journal of Psychiatry*, **139**, 213–220.
WEISSMAN, A. N. (1980) Assessing depressogenic attitudes: a validation study. Paper presented at the *51st Annual Meeting of the Eastern Psychological Association*. Hartford. Connecticut.
WEISSMAN, M. M. (1979) The psychological treatment of depression. *Archives of General Psychiatry*, **36**, 1261–1269.
—— PRUSOFF, B. A. & KLERMAN, G. L. (1978) Personality and the prediction of long-term outcome of depression. *American Journal of Psychiatry*, **135**, 797–800.
WING, J. K., COOPER, J. E. & SARTORIUS, N. (1974) *The Measurement and Classification of Psychiatric Symptoms*. London: Cambridge University Press.
—— & STURT, E. (1978) *The PSE-ID-CATEGO System Supplementary Manual*. London: MRC Social Psychiatry Unit.
ZUNG, W. (1964) A self-rating depression scale. *Archives of General Psychiatry*, **12**, 63–70.

*Gordon Parker, MD. PhD. FRANZCP. *Professor of Psychiatry, University of New South Wales, Prince of Wales Hospital, Randwick 2031, Australia.*

Chris Tennant, MD. MPH. FRANZCP. *Associate Professor of Psychiatry, University of Sydney.*

Ilse Blignault, BSc. Psych. *Research Assistant, School of Psychiatry, University of New South Wales.*

*Correspondence

(Received 14 October, 1983; revised 2 February, 1984)

https://doi.org/10.1192/bjp.146.2.132 Published online by Cambridge University Press