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DISCUSSION PAPER

Scale-based protocols for the detection and management of depression

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ABSTRACT

Despite evidence for the potential effectiveness of self-rating scales in the detection and management of depressive illness in primary care, they have not been as widely adopted as has been hoped. This may reflect views on their clinical utility when administered in isolation[1] as opposed to being incorporated into a management protocol.[2] More elaborate and sophisticated methods of improving the detection and management of depressive illness in primary care are available, such as educational programmes and management protocols based on clinical practice guidelines[3–5] and computerized packages.[6,7] However, these methods are either expensive or may have variable take up, as primary health care staff may not always find it possible to attend training programmes.[8] Hence, there is increasing interest in the use of more widely accessible and possibly briefer approaches to this problem.[9] One potential avenue that deserves further attention is the use of very brief protocols which have self-rated scales as a central part. This approach is discussed in this paper and work in progress with a new self-rating scale for depression,[10] the Brief Depression Scale, is used for illustrating this approach.

Introduction

As part of the modernization of the National Health Service (NHS) in the UK, the Department of Health has published blueprints or 'service frameworks' for the standards of care for mental health and other areas for the first time.[11–13] The frameworks have specific standards against which the quality of services can be independently assessed by independent bodies such as the Commission for Health Improvement.[13] There has also been a significant reorganization of primary care services, including the development of primary care trusts, which will in many cases have specific responsibility for primary mental health care services.[14] The *National Service Framework for Mental Health*[12] defines the service standards for primary mental health care and for access to secondary mental health care services. Implicit within these standards is that there is adequate identification of common mental health problems such as depressive illness in primary care settings and appropriate management. This has led to an increased level of interest nationally in the mechanisms of improving recognition and the management of common mental health problems in primary care settings.

Depressive illness is a major[15] and not infrequent public health problem with the community prevalence of depression being up to 5%[16] and the rate in primary care settings being at least 10%[17–19]: it may also be influenced by social and economic deprivation.[20] Even if depressive illness is

appropriately detected and managed in primary care, it has significant direct and indirect costs associated with its treatment and the economic implications of work absence or impaired work performance.[21–23]

Effect of non-recognition and of disclosure of missed cases to general practitioners

Unfortunately, there are consistent research findings that depressive illness is not optimally recognized or managed in primary care[24–26], with some estimates suggesting that up to 50% of such morbidity is undetected.[27] There are estimates that up to 75% of the population within a practice area might consult with their general practitioner (GP) at least once in a year.[28] Thus, undetected depressive illness can have a significant impact on health service use. Patients who present in primary care and suffer from depressive illness have improved service satisfaction if their emotional distress is identified[27,29] and non-recognition may lead to frequent surgery attendance[30–32] and increased health care costs.[22,33,34] Other evidence has suggested that consultation rates in primary care are higher with increasing age, in females[30, 35–37] and if psychological distress is 'somatized'.[31,38] All these factors are known to be associated with non-recognition.[27,31]

It is by no means clear that making GPs aware of hidden psychiatric morbidity improves outcome.[29,35,39] Although some studies have suggested that disclosure of screening results to GPs may produce benefits in the management of depression, not all studies have found this positive effect.[35,40] A recent meta-analysis of the most rigorous controlled interventions assessed the effects of feedback of the results of screening questionnaires to clinicians on recognition and intervention.[1] The authors' conclusions were that such questionnaires might be useful outcome measures, but that routine administration of screening questionnaires for depression was of questionable value, as feedback of the questionnaire results to clinicians did not consistently improve detection or outcomes. The possible group where there might be value in screening was the high-scoring group. These findings are of great importance in view of the potential costs of routine screening as an intervention. Routine screening with questionnaires would need to have a demonstrable reduction in direct and indirect health care costs, i.e. the 'cost offset' due to increased recognition rates of depression and hopefully improved management.[41]

Dowrick and Buchan[42] studied the effect of randomized disclosure of the results of the Beck questionnaire[43] on the outcome for patients not previously detected as cases by their GPs. They found that disclosure of the depression scores was associated with a worse outcome for these patients. This may be partly explained if the information presented to the GP is not easily understood or does not suggest appropriate management strategies.[2,44]

Factors influencing the detection of depression

'Somatic' presentation is an important patient-based factor leading to the under-recognition of depression, particularly as a substantial number of such patients may have concurrent chronic physical illness.[27,31,44] Other factors are related to the consultation process and include failure of the GP to recognize non-verbal cues of depression or the extent of the problem.[45–48] Howe[36,37] suggested that GPs may fail to detect depression for other reasons, such as the length of consultation, overall duration of surgery and numbers of patients seen. Klinkman[49] also suggested that, in primary care settings, there are competing demands for the attention of the clinician and that there is insufficient time for addressing each demand. For example, the type of presenting problem, socio-demographic factors of the patient, the surgery workload and booking intervals influence the consultation time available to GPs. In addition, there is evidence that increased detection of psychological distress is associated with longer consultation times. More recent research has also suggested that the severity of the depressive symptoms might have an influence on the rates of recognition, introducing a dimensional aspect to the detection of depression in primary care.[50]

Interventions to improve the detection and management of depression in primary care

Educational programmes

Gask *et al.*[46] showed that interviewing skills can be taught by video to primary care clinicians and maintained over time, suggesting that this was a potentially cost-effective intervention for improving the detection and management of depression. The seminal studies by Rutz *et al.*[51,52] in Sweden, which showed long-term benefits of an educational programme for GPs on the detection and management of depression, probably inspired the further development of this approach. Educational programmes for improving the detection and management of depression in primary care were introduced as core parts of the Depression Awareness, Recognition and Treatment (DART) campaign in the USA[4] and, to some extent, in the Defeat Depression Campaign in the UK.[27,53] The DART programme was devised in 1988 by the NIMH and had a modular design incorporating video material, lectures and seminars. It was introduced in 18 main sites across the USA[4] and was evaluated in the Iowa centre,[8] where changes in knowledge and attitudes were reported after the programme, which was of 12.5 h duration. However, the organizers commented that it was probably unrealistic to expect long-lasting changes in professional behaviour as a result of a brief training programme. Similar educational packages have been developed for the Defeat Depression Campaign and other newer educational approaches (which also address adherence to clinical practice

guidelines) have since been evaluated.[5,54]

However, such training programmes may target those GPs that are most motivated towards improving their management of depressive illness[8,55] and briefer techniques might address some of these problems.[56] Less-intensive methods may also be effective, as shown by Howe,[37] who performed a controlled trial where GPs improved their ability for detecting psychological distress in patients using a self-directed educational approach. This package was designed for use by individual GPs without outside support, based on the principles of reflection by GPs on their skills and performance in consultations. Clearly, further research is needed in order to determine which educational interventions are the most cost-effective and produce the most enduring desired changes in practice.[3,57]

Use of screening questionnaires

The simplest method of improving detection rates might be the use of screening questionnaires.[40,44,58,59] These can be quickly administered and can help detect 'depression cases', thus allowing GPs to focus on the severity of the condition and the most appropriate management. However, there is little information on the efficiency of such questionnaires in the detection of 'somatic' presentations of depression or in patients with other factors that increase the risk of non-detection by GPs. Mayou[59] argued that the patients most likely to benefit from screening may be less likely to take part and raised concerns about both the effectiveness and ethics of mass routine screening. This non-participation needs to be addressed if screening is to be established as a routine part of clinical practice.[2,40,59] Other ethical issues are that 'false positives' can be found by such scales, leading arguably to their unnecessary distress if there is inappropriate intervention in this group.[60]

Management protocols and clinical practice guidelines

Brief management protocols for the management of depression in primary care are available, such as the 'yellow card' system used in the Defeat Depression Campaign. After assessment of the patient with depression, the GP or primary health care professional was given certain suggested management lines on a template printed on the card, according to the severity of the patient's symptoms, the degree of suicide risk and certain clinical characteristics of the patient. The yellow card attempts to cover the most important points of current clinical practice guidelines for depression in primary care. Few such protocols have been formally evaluated for their effectiveness. Long protocols that include screening questionnaires, brief screening questions at interview, a brief diagnostic interview and practice audio or visual tapes, while possibly being more cost-effective than intensive training programmmes, require a time commitment that may limit their take up.[5,8]

Clinical practice guidelines have been introduced extensively in the USA[61] and potentially might offer evidence-based, consenus-based approaches to the detection and management of depression in primary care. However, these have been criticized by specialists as either not being comprehensive enough or being too narrowly focused on particular treatment approaches[62,63] to be multifaceted and flexible.[64,65] Unfortunately, such approaches have not been extensively evaluated, either alone or in combination with educational programmes, diagnostic interviews or screening instruments.[5,65–67]

Other technologies

Computerized screening and assessment has been the subject of much recent interest in the UK and USA[6,7,68] and has been shown to be acceptable to patients and flexible. Such computerized programmes have been shown to have adequate validity and reliability and represent a viable alternative to paper-based screening questionnaires or diagnostic interviews. Studies of the outcomes following such interventions are being published with encouraging results.[7] The only limitation on the use of computerized assessment and management is that of the widespread availability of this technology. While it is likely that the use of such technology will increase in the future, it is unclear if it will supplant 'paper and pen'-based approaches in the short-term.

Clinical utility of self-rating scales

The length, reading difficulty and complex response options of some questionnaires may lower patient completion rates in primary care and make responses difficult to interpret. In addition, the interpretation of some scale scores by GPs can be time-consuming and some scales require further diagnostic assessment after screening before it can be ascertained that the patient actually suffers from depression.[44] In addition, once a patient is screened by a depression rating instrument, it is often unclear what are the severity, degree of suicide risk and immediate management needs, e.g. do 'high' scores on different self-rating depression scales all mean the same thing[69–71] and need the same response?

Other limits of utility are that rating scale scores may not be routinely discussed between patients and professionals and, therefore, not perceived as important by patients. This can limit their take up by patients. In order for them to be fully adopted in a clinical setting information will have to be given to patients about the scales utility to the health care team in clinical management.[2]

Use of depression screening instruments in protocols

Bearing in mind these limitations of self-rating scales in real-life clinical situations, how can they be modified? As clearly pointed out in Gilbody *et al.*'s[1] systematic review, the routine use of self-rating scales has a considerable administrative cost and is a time burden for both the GP and patient. It may be possible to develop instruments which are useful in detecting depressive illness, but which also have properties whereby the

scores and severity of the overall complaints can be easily categorized in some manner in order to change the management of patients.

One crude method of achieving this might be by the 'triage' method, whereby high scores on the scale are used for assessing the severity of illness and degree of risk. This would then allow GPs more time to focus attention on specific management issues. However, there might be an argument that the scores of certain items need to be 'weighted' in the assessment of 'risk', e.g if related to suicidal ideation or delusional ideation. More complex assessments might be whether antidepressant medication or psychological treatment was most suitable. Any protocol should be capable of being 'overridden' if the clinician felt that certain aspects of the problem had not been covered by the protocol. It must be emphasized that the major purpose of the protocol would be helping to prompt clinicians to consider management options critically and could be driven by the results of both self-rated questionnaires and the consultation.

The characteristics of an ideal detection management protocol would be that the protocol was brief, i.e. it could be completed within no more than a couple of minutes in the waiting room by the patient and was accessible to the GP by a clear scoring system that helped to generate potential management options rapidly. These properties would be particularly important in view of the fact that the detection and management of depressive illness might be compromised by the workload intensity in a general practice.[2,36,37]

Another important practical point is how the information is collected by the GP. Does the GP have to total up the scores on the scale and look at the profile for individual item scores? It is possible that a template mechanism can be used for scoring, as some scales are designed so that a covering scoring template can be used for achieving this task quickly. This can be effective in situations where rapid screening is needed.

It is unrealistic to expect that any protocol could be entirely self-explanatory. A brief introduction session may be needed with the GP in order to explain the utility of the protocol. Then follow-up sessions will be needed for discussing shortcomings or points that are unclear before the protocol becomes an integral 'tool' in daily practice. It must be emphasized to GPs that their main purpose is to ensure that core information is collected, which is important in good practice in the management of depressive illness in primary care. The scoring on a screening questionnaire for protocol-based management could follow a diagnostic algorithm or decision analysis pathway.[72]

There are other issues that might relate to the use of scales in this manner, such as effects on patients' behaviour, doctors' behaviour and patient–doctor interactions.

Some patients might be quite happy to fill in the questionnaires and possibly more willing to address their psychological issues, as these have been given a greater perceived importance by the doctor by their very use. Other patients might believe that this is an intrusion and be embarrassed at filling in the scale or reluctant to discuus these issues with their doctor. Other issues are what happens if the patient does fill the scale in accurately and their problem is still not optimally managed by their doctor. Finally, there are questions as to whether the scale-driven protocol should be uniform or can be made more flexible for the specific needs of GPs, for example some GPs might feel more comfortable with their skills in assessment than management and others might need more specific detailed advice in monitoring progress.

Examples of current rating scales that may be used

In a previous paper in this journal, the two principal authors reviewed many of the current depression screening instruments and their properties,[44] which are summarized in Table 1. At that time, our conclusions were that suitable instruments needed to have seven major characteristics for use in primary care settings. They needed to be brief, simple to score and administer, be predictive of a diagnosis of depression by current criteria, be able to detect somatic presentations of depression, be acceptable to the patient, be sensitive to change in the clinical picture and be able to assist with protocol-aided management.

Several of the more commonly used rating scales could be potential candidates for forming the basis of a scale-driven detection and management protocol for depression.

There has been recent interest in developing shorter scales or versions of existing scales such as the CES-D,[73] the Beck Depression Inventory (BDI)[43,74,75] and new depression screening scales.[10,76] Of the many possible scales, the BDI,[43,74,75] Zung Self-rating Depression Scale[77,78] and Hospital Anxiety and Depression Scale (HADS)[79] will be discussed. Finally, work in progress on a protocol based on a new depression scale, the Brief Depression Scale (BDS),[10,80] will be used for illustrating how scales may be used as part of a detection–management protocol.

The original BDI had 21 items. However, a 13-item version of the scale has been developed,[43,74,75] which has been used in the screening of depressed patients by GPs and in a number of studies.[44] The BDI was only originally intended to assess the severity of depressive symptoms once a diagnosis had been made and, although it covers some of the important criteria for depression in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV),[81] other items are not as closely related to the DSM-IV criteria. The drawback of the scale in a primary care setting is still its length, since even the primary care version has 13 items, as opposed to the seven items of the HADS depression subscale.[79] The major advantage of the BDI is that its properties, as a measure of clinical change and of assessing the clinical severity of depression, are well established. An even shorter form of the BDI, comprising those items directly corresponding to the DSM-IV diagnostic criteria for a depressive episode, could be more readily used as the core of a detection–management protocol.

The Zung Self-rating Depression Scale[77] is composed of 20 statements that ask the respondent to indicate the amount of time a symptom is present. Although it has been used in primary care,[78] its routine use as part of a protocol might be limited by its length and the facility of scoring the instrument.

Table 1. *Composition of several current self-rating scales for depression which could be incorporated into protocols*

Psychometric properties	Beck Depression Inventory[74]	Zung Self-rating Scale[77]	Carroll Self-rating Scale[85]	Centre for Epidemiologic Studies Depression Scale[73]	Hospital Anxiety and Depression Scale[79]
Content validity[a]					
Depressed mood	10	10	8	25	0
Anhedonia	10	5	8	5	21
Appetite/Weight	10	10	8	5	0
Insomnia	5	5	12	5	0
Retardation/Agitation	0	5	15	5	21
Fatigue	5	5	4	5	0
Worthlessness/Guilt	24	5	8	10	0
Concentration	5	10	2	5	0
Suicidal thoughts	5	5	8	0	0
Number of criteria[b]	Yes	Yes	Yes	Yes	No, three
α-Coefficient	0.76–0.95	0.92	–	0.85–0.90	0.80–0.81
Concurrent validity[c]	0.61–0.86	0.56–0.80	0.80	0.44–0.75	–

[a]By *Diagnostic and Statistical Manual of Mental Disorders* (fourth edition) (DSM-IV) criteria (percentage of item contribution).
[b]Five or more of the diagnostic criteria for a DSM-IV major depressive episode approximated to the construct validity.
[c]Correlation with the Hamilton Depression Rating Scale.

This may make it difficult for the GP to use it as an aid to treatment.

The HADS[79] has a seven-item depression subscale. This makes it easy and quick to score and to complete by the patient. Despite these substantial advantages, which would favour its use in primary care, its drawback is that it mainly measures anhedonia and may 'miss' the somatic presentations of depression that are not infrequently encountered in primary care.[82] Its brevity also means that only two DSM-IV criteria for major depression (markedly diminished pleasure and fatigue) are represented. This limits the use of the scale in a detection–management protocol as, after screening with this instrument, it would still be necessary to perform a full diagnostic assessment in order to be certain that the DSM-IV diagnostic criteria for major depression were fulfilled. It might be possible to modify the scale by adding new items more closely related to the DSM-IV criteria and replacing some existing items without dramatically increasing its length, but this would entail a major validation study.

Development of the Brief Depression Scale protocol

The new ten-item, self-rated BDS was validated in in-patients and out-patients with depressive illness and anxiety disorders[10] and a validation study was undertaken in primary care.[80] In this hospital sample, the BDS showed satisfactory convergence with the depression subscale of the HADS (R_s 0.89 and $P < 0.0001$). In the hospital validation study a cut-off score of 19 on the BDS had a sensitivity of 87% and a specificity of 90%. The BDS was shown to have sensitivity to clinical change in both the hospital and primary care validation studies.

An important property of the BDS is that its item content closely corresponds to the major criteria used for the DSM-IV diagnoses of a depressive episode[81] and the criteria for a depressive episode of the tenth revision of the *International Statistical Classification of Mental and Behavioral Disorders* (ICD-10).[83] High scores on specific BDS items are associated with a high probability that specific DSM-IV criteria are fulfilled. Therefore, analysis of the specific item scores on the BDS would give an indication of how many diagnostic criteria are fulfilled and reduce the time required for diagnostic assessment after screening with the BDS. Over 85% of patients in the primary care validation study[80] scoring highly on five or more BDS items fulfilled the DSM-IV diagnostic criteria for major depression. The ten BDS items are shown in Table 2 with the closest corresponding DSM-IV and ICD-10 diagnostic criteria.

The potential utility of the BDS as part of a clinical protocol was noticed during the validation study of the BDS in three general practices in Leeds with a total population covered of over 25 000.[80] A total of 527 consecutive attenders in the practices completed the BDS and, during the primary care study, the BDS was validated against other established self-rated depression measures such as the BDI[43] and HADS.[79]

Convergent validity was assessed by the Spearman rank order correlation coefficient r_s. The BDI total score, the BDS total score and the HADS depression subscale score were highly significantly intercorrelated (all at $P < 0.00001$). The Spearman rank order (r_s) correlation values were 0.85 between the BDS and HADS depression subscale, 0.83 between the BDI and BDS and 0.73 between the BDI and HADS depression subscale. These remained significant even if the effects of the type of presentation (somatic versus non-somatic), the sex of respondents or the age of the respondents (above and below the median value) were assessed.

Twelve percent of those screened by the BDS were identified as possible depression cases, 65% of whom had identified depression as their major presenting complaint. The remainder had somatic complaints such as fatigue, backache or gastrointestinal problems as one of their major presenting complaints. Thirty-three percent of the patients had depression of moderate to severe nature and the remainder had mild to moderate severity illness. Preliminary severity score ranges for the BDS, which correspond to the clinical severity of depression, were operationalized from the results of a struc-

Table 2. *Brief Depression Scale (BDS) item content and congruence with the tenth revision of the International Statistical Classification of Mental and Behavioural Disorders (ICD-10) and the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnostic criteria*

BDS item	ICD-10 criterion (depressive episode)	DSM-IV criterion (major depression)
Sadness noticed by others	Depressed mood to a degree that is definitely abnormal for the individual	Depressed mood most of the day, nearly every day, as indicated either by subjective accounts or by the observations of others
Reported sadness	Depressed mood to a degree that is definitely abnormal for the individual	Depressed mood most of the day, nearly every day, as indicated either by subjective accounts or by the observation of others
Feeling tense	No specific criterion: covered by a change in psychomotor activity (agitation)	No specific criterion: covered by change in psychomotor activity (agitation)
Decreased sleep	Sleep disturbance of any type	Insomnia nearly every day
Decreased appetite	Change in appetite (decrease) with corresponding weight change	Decrease in appetite nearly every day
Poor concentration	Complaints or evidence of diminished ability to think or concentrate	Diminished ability to think or concentrate
Loss of drive	Decreased energy or increased fatiguability	Fatigue or loss of energy nearly every day
Loss of interest	Loss of interest or pleasure in activities that in all or almost all are normally pleasurable	Markedly diminished interest or pleasure activities most of the day
Ideas of guilt	Unreasonable feelings of self-reproach or excessive and inappropriate guilt	Feelings of worthlessness or excessive or inappropriate guilt
Thoughts of death or dying	Recurrent thoughts of death or suicide	Recurrent thoughts of death (not just fear of dying)

tured diagnostic interview on the Clinical Interview Schedule-Revised[84] in a subsample of patients screened with the BDS. Scores of over 45 points were strongly associated with the most severe illness, scores of 35–45 points were associated with moderately severe illness, scores of 25–35 points were associated with moderate illness and scores of 15–25 points were associated with mild severity illness.

These preliminary data suggested that the BDS could be used for accurately identifying depression in primary care, with both somatic and non-somatic presentations. As there was a very high likelihood of fulfilling the necessary DSM-IV diagnostic criteria for depression if sufficient BDS items had high scores, there should be little need for post-screening assessment of patients in order to ensure that the diagnosis is correct. Importantly, the severity of the illness can be stratified by the BDS scores, so that treatment, risk management and referral decisions can be made. Further work is ongoing on using information from the scale for guiding management and referral decisions.

The present version of the protocol consists of three parts covering assessment, management and review of progress and broadly covers current clinical practice guidelines for depression.[27] Table 3 shows the part of the BDS protocol that deals with management options. This follows a similar approach to that of the yellow card introduced in the Defeat Depression Campaign.

Further work is needed in order to assess the utility of the protocol in practice. This would be in terms of the perspective of primary health care staff, i.e. its ease of use, whether it helps save time in assessment and whether it is helpful in making management decisions and in monitoring progress. It is the intention that, ideally, the protocol will need a minimum amount of introduction and training before it is used. However, further evaluation is needed in order to assess whether additional educational and information resources are needed in conjunction with the protocol in order to maximize its effective use.

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Table 3. *Example from a pilot study of how the Brief Depression Scale could be used for informing management strategies in a protocol*

Scale scores	Meaning	Action
Five items scored at 4 points or more or a total score over 25 points	Probable depression	Score 45 or more. Severe illness: may be at considerablerisk of suicide – consider the need for in-patient or intensive day care or home treatment Score 35–45. Moderately severe illness: moderate suicide risk – start antidepressants with mental health referral advisable (out-patient or community mental health team) Score 25–35. Moderate illness: assess suicide risk – may need to use antidepressants or, if the patient's preference, psychological therapy.[a] Non-urgent mental health referral may be an option if there is a failure to respond
Three items scored at 4 points or more plus two other items scored at 2 points or a total score over 15 but under 25	Possible mild depression or adjustment disorder	Suicide still a possible but lower risk. Consider psychological therapy (brief cognitive–behavioural therapy and counselling)[a] as first-line treatment. Mental health referral not essential
Two or less items are scored at 4 points or a total score under 15	Depression unlikely	Exclude anxiety disorders, drug or alcohol use and adjustment disorders

[a]This management part of the protocol is accompanied by two other parts on assessment and review.

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