Screening for depression in African-Caribbean elders

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Background. There are increasing numbers of older African-Caribbeans in the UK. Primary care staff often feel less confident about diagnosing depression in this group. Screening instruments may assist in making diagnoses in cross-cultural consultations.

Objective. We aimed to determine the sensitivity and specificity of screening instruments for depression in older African-Caribbean people in Manchester, UK.

Methods. We carried out a two-stage study to compare three screening instruments for depression (Geriatric Depression Scale, Brief Assessment Schedule Depression Cards, Caribbean Culture Specific Screen), with a computerized diagnostic interview for mental health disorders in older adults (Geriatric Mental State). The study was set in inner-city Manchester. The subjects were community-resident African-Caribbeans aged 60 years and over; 227 subjects were approached. Of the 160 people screened, 130 agreed to diagnostic interview. The main outcome measures were Spearman correlation coefficients; these were calculated between each screening instrument and the diagnostic interview. Receiver-operating characteristic (ROC) curve analysis was used to determine appropriate sensitivity and specificity for each instrument.

Results. The results for the largest subgroup, the Jamaicans (n=96/130), demonstrated highly significant correlations between screening instruments and diagnostic interview (P<0.001). Each instrument had a high sensitivity: Brief Assessment Schedule depression cards (cut-off ≥6; sensitivity 90.9% (95% CI 58.8–99.8), specificity 82.1% (95% CI 74.0–90.3)), Caribbean Culture Specific Screen (cut-off ≥6; sensitivity 90.9% (95% CI 58.8–99.8), specificity 74.1% (95% CI 64.8–83.4)), and Geriatric Depression Scale (cut-off ≥4; sensitivity 100% (95% CI 97.1–100), specificity 69.1% (95% CI 59.6–79.2)).

Conclusions. These screening instruments demonstrate high sensitivity levels, if an appropriate cut-off point is used. The culture-specific instrument did not perform better than the traditional instruments. Health professionals should approach the consultation in a culturally sensitive manner and use the validated instrument they are most familiar with.

Keywords. Depression, ethnicity, screening.
recognize depression and allow patients access to appropriate treatment are essential.

The advantages of existing screening instruments for depression are that they are available and acceptable to patients, and that professionals may already be familiar with their use. However, these existing instruments may miss culture-specific symptoms and atypical presentations of depression. Only one previous study has compared existing instruments with a culture-specific instrument in older African Caribbeans. This was in a group of primary care attenders in South London.

This study compares two existing instruments (Geriatric Depression Scale and Brief Assessment Schedule depression cards) and a culture-specific instrument (Caribbean Culture Specific Screen), with a structured diagnostic interview (Geriatric Mental State).

Methods

Screening instruments
The 15-item Geriatric Depression Scale (GDS) has 15 questions answered as ‘yes’ or ‘no’. The Brief Assessment Schedule depression cards (BASDEC) have a question written on each of the nineteen cards. The subject places them in ‘true’, ‘false’ or ‘don’t know’ piles. The Caribbean Culture Specific Screen (CCSS) consists of 13 questions answered as ‘yes’ or ‘no’. The higher the score on these three instruments the greater the likelihood of depression.

The BASDEC and GDS were reviewed by a panel of older community-resident African-Caribbeans. They assessed content equivalence to ensure that the questions were relevant in their cultures and technical equivalence to ensure that the way the screening instruments were administered was acceptable. There were no suggestions for changes in content. Their main suggestions regarding technical equivalence were to have a broader explanation of the aims of the project and a clearer introduction to the use of screening tests.

Diagnostic instrument
The Geriatric Mental State was used in conjunction with a computer programme, AGECAT, and is a diagnostic psychiatric interview for use with the elderly. It has been used with the African-Caribbean community in the UK. Subjects are scored at six levels (0–5), where cases of depression score three or greater.

Pilot study
The ability to recruit subjects, likely response rate and acceptability of the instruments were assessed in a pilot. The pilot was based in one inner-city practice in central Manchester. In total, out of the 27 subjects, 20 agreed to participate (74.1%). All but one completed the interview and found it acceptable. Two subjects interviewed (10%) were not African-Caribbean.

Sampling
General practices in areas with high proportions of African-Caribbeans were sent a letter to introduce the project and nine out of 16 practices agreed to participate. Five declined because of clinical and administrative workload and two gave no reason. These practices were similar to the participating practices in terms of size and number of partners.

No practices had a register of ethnic minority patients. Subjects were identified by an initial computer search for patients aged 60 years and over, followed by a manual search by practice staff for those thought to be of African-Caribbean origin. Contacts were established with community leaders and organizers of day-care to facilitate participation and contact any people not on GPs’ lists or missed by the above method.

Interviewers
Two interviewers of similar cultural background to the subjects were employed to administer the screening instruments in a standardized manner. Training was via videos and practical demonstrations. A training manual facilitated reliable rating. Inter-rater reliability was high (98%) and undertaken by interviewers assessing standard video-taped interviews.

Main study
This study was conducted in inner-city Manchester. The subjects were community-resident African Caribbeans aged 60 years and over. Subjects were identified via the methods described above.

In stage one, eligible subjects were contacted by letter and interviewed at home. They were screened for depression by the interviewers and demographic data were collected, including self-assigned ethnicity and place of birth. In stage two, subjects were interviewed at home using the Geriatric Mental State and AGECAT. This was administered by GR, who was blind to the results of the screening interview.

The general practice notes of subjects who completed both stages were examined for medication, number of consultations and documentation of mental health problems in the last year.

Analysis
Spearman correlation coefficients were calculated between the separate screening tests and diagnostic interview. A receiver-operated characteristic (ROC) curve was produced for each test, allowing for the choice of most appropriate cut-off point for each test.

Results
Of 227 subjects contacted, 160 subjects agreed to participate (70.5%) in stage one. Of the 160 subjects screened by the interviewers, 12 were of inappropriate
ethnicity (7.5%) and three had moved out of the district. Of the 145 eligible subjects, 130 subjects (89.7%) agreed to participate in stage two. Of the 15 who declined the second interview, 10 subjects (6.9%) felt their mental health did not warrant further investigation and five subjects were physically too unwell (3.4%). All had scored within the normal range for the screening instruments. Thirteen cases (13/130) of depression were detected by diagnostic interview (10%). The majority of subjects completed both stages of the interview (screening and diagnostic) within 6 days (90%).

A large number of subjects lived alone (39.6%); the remainder (32.3%) lived with a spouse or partner, or other family members (25.0%). All the subjects were registered with a GP and most had attended the practice in the past year (93.8%). About a third (30.8%) reported a physical disability that they felt regularly affected their ability to perform daily tasks. Almost two-thirds (63.1%) suffered from hypertension, heart disease, diabetes or a combination of these. Most were literate in English (95.4%).

The largest subgroup was composed of subjects who were born in and had migrated from Jamaica, and who described themselves as ‘Black Caribbean’ (n = 96). There were equal numbers of males to females. The mean age for Jamaicans was 69.1 years (SD 6.3 years).

The scores for the screening instruments did not follow statistically Normal distributions, so the strengths of the relationships between the Geriatric Mental State and AGECAT, and each screening test were compared using the Spearman correlation coefficient. The correlations obtained are shown in Table 1 and were statistically highly significant (P < 0.001).

Receiver-operating characteristic curves (ROC) were plotted for each instrument. Those for the Jamaican subgroup are shown in Figure 1. Optimal cut-off points were determined for all subjects interviewed and for the Jamaican subsample. The revised cut-off points produced slightly better sensitivity levels than standard cut-off points for each test (Table 2), with all sensitivity levels over 90%. The revised cut-off points were also lower than the standard cut-off points.

### Table 1

Spearman correlation coefficients for the Geriatric Depression Scale (GDS), Brief Assessment Schedule depression cards (BASDEC) and Caribbean Culture Specific Screen (CCSS) as compared with the Geriatric Mental State

<table>
<thead>
<tr>
<th>Group</th>
<th>GDS</th>
<th></th>
<th>BASDEC</th>
<th></th>
<th>CCSS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>P</td>
<td>r</td>
<td>P</td>
<td>r</td>
<td>P</td>
</tr>
<tr>
<td>All subjects</td>
<td>0.53 &lt;0.001</td>
<td>0.67 &lt;0.001</td>
<td>0.64 &lt;0.001</td>
<td>0.64 &lt;0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamaican</td>
<td>0.56 &lt;0.001</td>
<td>0.68 &lt;0.001</td>
<td>0.64 &lt;0.001</td>
<td>0.64 &lt;0.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

**Main findings**

All the screening instruments performed well and can be used with minimal training in a community setting. The culturally specific instrument did not perform better than the commonly used GDS, or less-well-known BASDEC. Only three out of the 13 cases (23%) of depression were known to their GP.

Our results are similar to those of a recent study in South London. However, we limited our results to one ethnic group, as different cultures (e.g. Jamaican and Trinidadian) may perform differently. We also used an
Over 90% of the sample were recruited via their GP. This sample liaising with and interviewing older African-Caribbeans. This advisory panel of community members for advice on screening instruments in this study. These methodological differences may have resulted in different cut-off points for the cases of depression. These methods may have optimized the acceptability of the study and the screening instruments. This has implications for staff training and cultural awareness within practice.

African-Caribbeans are not a homogeneous group. The majority of older adults in the UK are from Jamaica. Jamaicans were also the largest group within the study and so the data was analysed by ethnic group and as a whole group. This may explain why in this study the cut-off point for the CCSS was higher and produced higher sensitivity levels than the validation study from London, where all Caribbeans were included.

Detection of depression

Thirteen cases of depression (10%) were detected by diagnostic interview. This was not an epidemiological study and this figure is slightly lower than those in recent studies. All had been seen by their GP in the past year. Depression is known to be associated with physical illness and in this study two-thirds of the subjects had a chronic medical condition, and almost a third reported a limiting physical disability.

Less than a quarter of depressed subjects (n = 3/13; 23%) were known to their GPs. All of these were receiving pharmacological treatment. This suggests that there is a need for training in detection and management of depression for primary care staff, particularly when dealing with ethnic minorities.

Having screening instruments does not ensure usage in primary care. Knowledge and use of screening tests can be improved through appropriate dissemination of information, guidelines for management and training in multi-disciplinary settings. More novel ideas such as toolkits with instruments and information sent to health professionals may be successful. The Royal Colleges of General Practice and Psychiatrists are trying to increase the profile of mental illness for professionals and the public. Often depression in the elderly is viewed as inevitable, although it can be treated with medication and increasingly psychological treatments are also being advocated. Multifactorial educational approaches for primary care professionals can successfully alter practice. Strategies for the detection and management of depression in older people need to be addressed at a local and national level. Included in this should be working with ethnic minority groups.

Performance of screening tests

The screening tests were acceptable to patients and easy to administer. They require only brief training and would be suitable for use by members of the primary health care team. In our study they were used by people with a nursing and social work background. They performed well compared to the standard diagnostic interview.

Although standard instruments such as the Geriatric Depression Scale have been validated in this population it must be emphasized that the cut-off scores have had to be altered. They do have a high sensitivity, and consequently few false negatives, and would be suitable for use in primary care. However, the specificity levels vary and could lead to a high rate of false positives. This has implications for practice workload. Screening tests are not advocated on a population basis and may be more accurate when used in high-risk groups or with those patients that the GP suspects has problems. This area needs to be further researched within primary care.

There is debate over whether screening tests should be specifically designed for a given cultural group or if pre-existing instruments can be used. Culture-specific instruments detect particular cultural presentations in a particular population. These presentations may be missed by conventional instruments. There may be a number of reasons why the culture-specific instrument may not

### Table 2

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Cut-off score</th>
<th>Sens % (95% CI)</th>
<th>Spec % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>≥5</td>
<td>91</td>
<td>72</td>
</tr>
<tr>
<td>All subjects</td>
<td>≥4</td>
<td>92.3 (63.8–99.8)</td>
<td>70.9 (62.7–79.2)</td>
</tr>
<tr>
<td>Jamaican</td>
<td>≥4</td>
<td>100.0 (97.1–100)</td>
<td>69.4 (59.6–79.2)</td>
</tr>
<tr>
<td>BASDEC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>≥7</td>
<td>71</td>
<td>88</td>
</tr>
<tr>
<td>All subjects</td>
<td>≥6</td>
<td>92.3 (63.8–99.8)</td>
<td>84.3 (77.7–91.0)</td>
</tr>
<tr>
<td>Jamaican</td>
<td>≥6</td>
<td>90.9 (58.8–99.8)</td>
<td>82.1 (74.0–90.3)</td>
</tr>
<tr>
<td>CCSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>≥5</td>
<td>89</td>
<td>84</td>
</tr>
<tr>
<td>All subjects</td>
<td>≥6</td>
<td>92.3 (63.8–99.8)</td>
<td>78.6 (71.2–86.1)</td>
</tr>
<tr>
<td>Jamaican</td>
<td>≥6</td>
<td>90.91 (58.8–99.8)</td>
<td>74.1 (64.8–83.4)</td>
</tr>
</tbody>
</table>
appear to have an advantage over conventional instruments in this study.

(i) All the scales concentrate on symptoms. There is a degree of overlap in the questions on each scale, with similar questions on worry, sleep, hopelessness and mood.

(ii) All the instruments are brief, with a simple response format.

(iii) The administration of the instrument in a culturally sensitive way may be as important a factor as the content of the scale itself. In stage one the interviewers were of a similar cultural background.

In this study we had advice from a panel of community members and their suggestions regarding gaining rapport with the subjects and emphasizing full explanations were used in both stages of the study. The sensitivity and specificity of all the instruments will have been facilitated by the full explanation of the reasons for their use. This emphasizes the need for community participation in any primary-care or community-based research.

Methodological limitations
The study aimed to be culturally sensitive, but a key limitation was the lack of a true ‘gold standard’ diagnostic interview for older African-Caribbeans. Until we have this the use of general interviews has to be considered as an approximation. In the GMS’s favour is that it has been validated and used widely cross-culturally, including successfully with the African-Caribbean group.12 It also allows for comparative studies. It has been compared with a culture-specific diagnosis from religious healers and both have broadly similar results.7

The primary method of deriving the sample was via the identification of eligible subjects by general practice staff. This resulted in the inclusion of people who were not African-Caribbean (7.5%) and presumably excluded some eligible subjects. For the purposes of assessing screening tests, a strictly random sample is not required. However, the sample covered a sufficient range of subjects to make the results of the evaluation applicable to the general African-Caribbean population. The nature of the sample does mean that the findings should not be extrapolated as estimates of the prevalence of depression.

Conclusions
These screening instruments were acceptable to older people and could be used by members of the primary health care team. This study confirmed that a culture-specific instrument was no more effective than existing generic instruments. Our findings suggest that training health professionals to work in a culturally sensitive manner is vital, if they are to improve their diagnostic skills with older African-Caribbeans. Future work has to look at appropriate and acceptable management in primary care.

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References