Activities-specific and Balance Confidence (ABC) Scale

Description

The Activities-specific and Balance Confidence (ABC) Scale is a questionnaire developed to measure an aspect of the psychological impact of balance impairment and/or falls. The underlying construct being measured by the ABC scale is based on the self efficacy theory reported by Tinetti et al (1990).

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<tr>
<th>Target population(s)</th>
<th>Time taken</th>
<th>Cost</th>
<th>Special training required</th>
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<tbody>
<tr>
<td>Older people; people at risk of falling</td>
<td>10-20 minutes</td>
<td>Nil</td>
<td>No</td>
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Instructions to the client and method of scoring

The client is asked to rate his or her confidence in performing each of the activities on a scale from 0 (no confidence) to 100% (complete confidence) without losing balance or becoming unsteady. An average percentage for each of the 16 items is calculated. Well older people have been reported to score 90–100% on the ABC scale (Myers et al 1998).

Sensitivity/specificity

A cut-off score of 67% on the ABC resulted in 84% sensitivity and 87% specificity in correctly classifying fallers and non-fallers in a cross-sectional study of older people living in the community (Lajoie and Gallagher 2004).

Reliability

High retest reliability for the overall scale and most of the individual items has been reported in samples of community dwelling older people (r = 0.92) (Powell and Myers 1995), and lower limb amputees (ICC = 0.91) (Miller, et al. 2003).

Validity

The ABC scale differentiated older people who reported avoiding activity because of fear of falling from those who did not (Myers et al 1996). Significantly lower ABC scores were associated with lower levels of mobility (Powell and Myers 1995) and falls (Lajoie and Gallagher 2004). The ABC scale correlated significantly with a range of balance and mobility scores in samples of older people with mild balance impairments, and clients who had fractured their hips (Cho et al 2004, Lajoie and Gallagher 2004, Whitehead et al 2003). The ABC scale was responsive to change with a balance exercise program in older people living in retirement villages, and in a sample of osteoarthritic clients following hip or knee replacement surgery (Myers et al 1998). Hip fracture clients who fell in the four months following surgery had significantly lower ABC scores at baseline compared to those who did not fall (Whitehead et al 2003). Significant correlations were reported between the ABC scale and the Dizziness Handicap Inventory in clients attending a vestibular clinic (Whitney et al 1999).

Commentary

A major innovation in the measurement of psychological sequelae of falls occurred in 1990 with the development of the Falls Efficacy Scale (FES) by Tinetti et al (1990). The FES introduced the concepts that falls efficacy is a continuum, not a dichotomous factor, and that it is situation-specific, that is, it varies depending upon the activity and environment. A limitation of the 10 item FES was that the activities being considered were of low level challenge to the balance system. Three modifications of the original FES have been developed to include more challenging activities, with the aim of earlier identification of problems with falls efficacy. These were the ABC scale (Powell and Myers 1995), the Modified Falls Efficacy Scale (Hill et al 1996), and the Swedish version of the Falls Efficacy Scale [FES(S)] (Hellstrom and Lindmark 1999).

The ABC is a useful clinical tool for a range of client groups. However, administration of the scale does require the client to have reasonably intact cognition. In particular the client must understand that what is being assessed is confidence in doing the activity, not ease with which the activity can be performed.

References

Mini-Mental State Examination (MMSE)

Description

The Mini-Mental State Exam (MMSE) is a brief test of cognitive impairment used widely to screen for dementia. The original test, developed by Folstein et al (1975), includes questions about orientation, attention, recall, and language. Galasko et al (1990) developed a shorter version of the test (Modified MMSE) that is as sensitive as the complete test.

<table>
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<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>People at risk of dementia</td>
<td>5–15 minutes</td>
<td>Nil</td>
<td>No</td>
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Instructions to the client  The test is scored by an assessor who questions the client. Questions include those relating to orientation to place, attention, calculation, and recall.

Example: Spell ‘world’ backwards. (Answer: DLROW.) Subtract 7 from 100, then repeat from result etc. Stop after 5. (Answer: 100, 93, 86, 79, 65.)

Method of scoring  Each question is scored out of 5 except for the recall question, which is scored out of 3. The recommendation for the modified scale is to add only the scores for recall and orientation for place to give a total out of 8.

Commentary

The MMSE is the almost universally accepted screening tool for cognitive impairment. While it is most useful for detecting dementia, low scores may be due to a number of conditions including delirium and depression. It is useful across a range of physiotherapy settings including ambulatory, home, and inpatient settings. A score below 24 requires further evaluation including informant history and more detailed cognitive assessment; this usually requires the input of an appropriate medical specialist and/or a neuropsychologist. These services can be found in a memory clinic or other practice settings. For clients who have had any secondary education a score below 26 should be similarly further evaluated. The test is very sensitive to education (Tombaugh et al 1992, Tanglos et al 1996), age, and cultural background; for instance a score of 20 may be normal for a 90 year old who had limited schooling. The test does not deliver 100% sensitivity so a score of 28 may be obtained in a well-educated person with other features and an eventual diagnosis of dementia. Also, it is important to be aware that ‘WORLD’ backwards and ‘Serial 7’ are not equivalent. Folstein intended ‘Serial 7’ to be offered to all except those who were innumerate. Whichever is used, the same should be used in subsequent tests to detect change.

Cognitive impairment is unreliably detected by interaction with the client, so a policy of routine screening using a tool such as the MMSE should be considered, especially with higher risk groups such as older inpatients. Interest in detection of cognitive impairment has undoubtedly been increased by the current availability of specific dementia pharmaceutical therapies (e.g. drugs with trade names such as Aricept, Exelon, Reminyl and Ebixa) and anyone who screens positive on the MMSE should be considered for further evaluation so they are not denied these therapies. While the MMSE was not designed to monitor change, it is sensitive to this; a change of 5 points is likely to be clinically significant.

What are the implications for physiotherapists of a low MMSE score in clients? Apart from initiating further assessment, the therapist needs to be aware that clients may need repeated instruction and that they may adhere poorly to appropriate precautions. They may also have non-memory impairments, such as reduced planning or visuospatial impairments, affecting movement and more complex activities. Reduced language skills may also affect comprehension and expression.

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References