Feasibility of recommended cognitive screening tools for older adults in carehomes

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To the Editor:

There is an increasing move towards screening carehome residents for cognitive issues. Many tools are available for cognitive assessment in older adults with little guidance on the optimal approach and consequent heterogeneity in approach.[1] The Alzheimer's Society have produced a "toolkit" that recommends particular assessment tools for differing healthcare settings.[2] For carehomes, Hodkinson's abbreviated mental test (AMT) [3] and/or General Practitioner assessment of cognition (GPCOG) are suggested as initial screens[4]. Where there is cognitive impairment the Montreal Cognitive Assessment (MoCA) [5] is suggested. All three tests may often be used, with AMT/GPCOG suggesting a cognitive impairment that is then characterised with MoCA.

There is a literature describing cognitive screening test properties such as accuracy and reliability.[6] Other important, but less well described, metrics are feasibility and acceptability. Understanding these properties is crucial for implementing a tool into practice. We sought to assess these properties for the cognitive assessments recommended for carehomes.

Methods

We performed cross-sectional assessment in all NHS continuing care (NHS-CC) units in Glasgow, UK. NHS-CC units offer professional nursing level care and frequent medical review to residents with complex physical and mental health needs.

Within each NHS-CC unit, the assessor approached senior staff to discuss suitability for cognitive testing. A standardised question was used "Do you feel this resident is suitable for any form of cognitive testing?" and final decision on whether testing would proceed was made by NHS-CC staff. A-priori we decided that patients in last days of life or where treatment was purely palliative would not be tested. Patients felt to be unsuitable for any form of testing (medically unstable, end of life care) were excluded, all other patients were approached for assessment.

We recorded if patients refused cognitive testing; were unable to attempt any of the tests or were unavailable on two occasions. Assessment was in a fixed order AMT, GPCOG and MoCA. Testing was performed in one session and if patient became distressed or struggled to complete testing then assessment was discontinued. We recorded test scores; time taken to complete tests and described numbers completing tests and resulting scores. The project was assessed as audit of practice and had approval from the local Caldicott guardian.

Results

We assessed patients across all six city NHS-CC units, n=222 patients, 107 (48%) had a formal dementia diagnosis.

In total 73 (33%) completed at least one test, median age:82 years (IQR: 76-88); n=50 female (40%); 25 (34%) had a formal dementia diagnosis. All patients completed AMT, 23 (32%) completed all three tests.(Figure 1) Median assessment time:6 minutes (IQR: 4-15;range:2-34); for patients completing all three tests median assessment time:11minutes (IQR:15-24). At usual thresholds for "screen positive" n=3 (4%) screened as no cognitive impairment.(Figure 1)

Limiting to the 25 with formal dementia diagnosis (where MoCA is recommended as primary test), 6 (24%) participants were able to complete MoCA testing, 12 (48%) completed GPCOG and all completed AMT.

Discussion

Our results highlight the challenges of even basic cognitive assessment in a carehome setting. Routine assessment of *all* care-home residents using recommended tools may not be feasible and even a short test battery is associated with substantial non-completion and administration time.

The three recommended assessments have differing purposes and do not necessarily have to be administered in sequence. The added test burden of performing all three assessments in a single session may have biased results particularly for MoCA which was always performed last. Accepting this caveat, our data would suggest that AMT is a reasonable first step screening assessment. The low completion rate and high prevalence of cognitive impairment at usual thresholds suggests that MoCA may not be suited to carehome settings.

Our measures of test suitability, acceptance and completion suggest that issues with feasibility of a universal cognitive screening approach. We did not operationalize suitability for assessment but rather left this to the discretion of the senior unit staff. We feel this approach mirrors the real world setting. Although NHS-CC is a UK specific resource, the casemix will be similar to higher level "nursing home" / longterm care facilities and we feel our findings have external validty.

Conclusion

Time required and limited completion rates suggest that cognitive screening should use the shortest validated tool. With the very high prevalence of cognitive impairment in NHS-CC patients (at usual test thresholds) it could be argued whether "screening" for cognitive impairment per se is worthwhile. Targeted assessment for common incident problems that may require intervention such as delirium may be a more useful approach to cognitive assessment in carehome settings.

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	Yes	No	Yes	No	Yes	No
Employment or Affiliation		no		no		no
Grants/Funds		no		no		no
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Stocks		no		no		no
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References

1. Shenkin SD, Russ TC, Ryan TM, Maclullich AMJ. Screening for dementia and other causes of cognitive impairment in general hospital in-patients. Age Ageing.2014;43:166-168.

2. Alzheimer's Society. Assessing cognition in older people a practical toolkit for health professionals. www.alzheimers.org.uk/cognitiveassessment.(accessed Sept 2014)

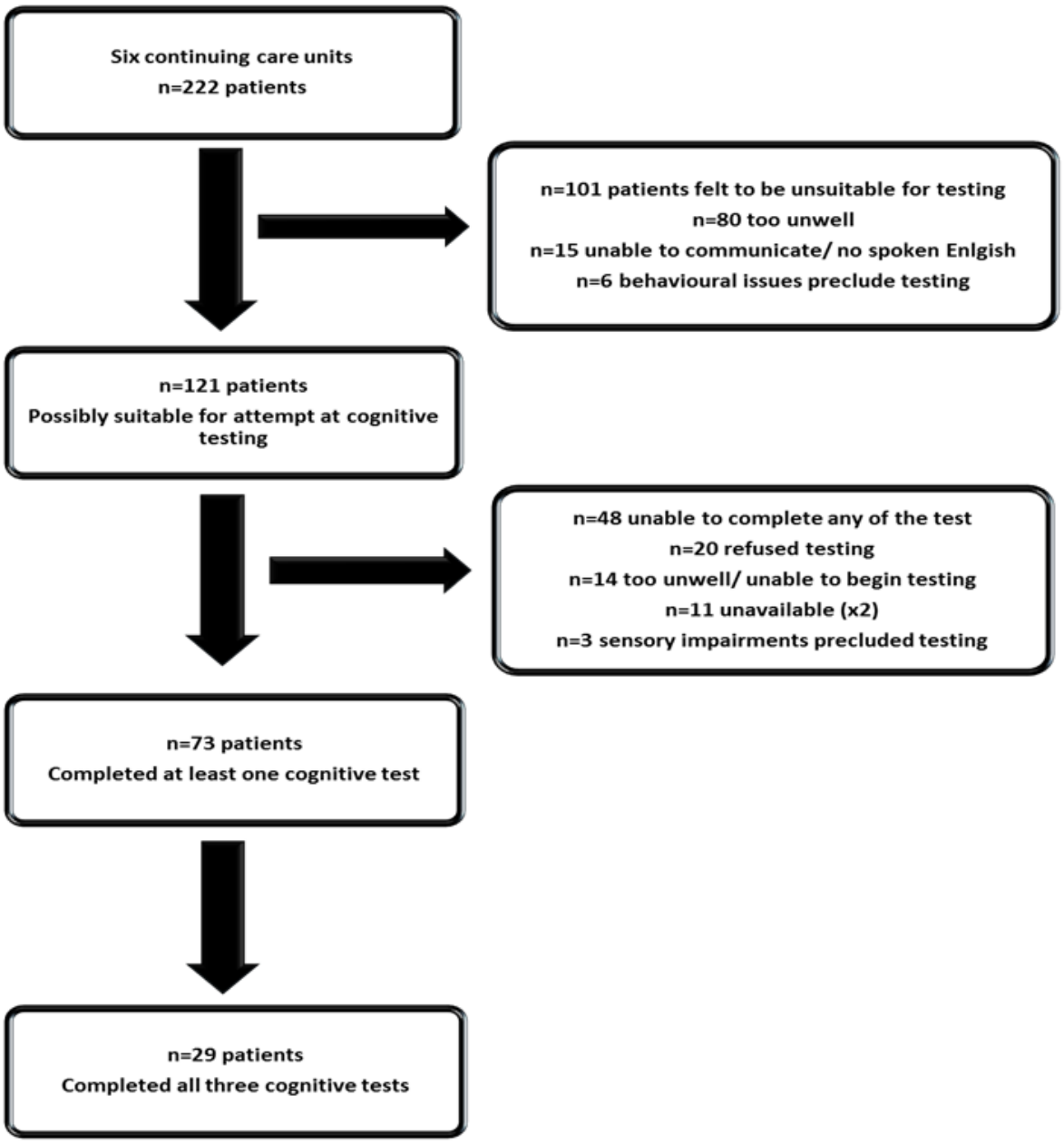
3. Hodkinson HM. Evaluation of a mental test score for assessment of mental impairment in the elderly. Age Ageing.1972; 1:233-8.

4. 1.Brodaty H, Pond D, Kemp NM, et al. The GPCOG: a new screening test for dementia designed for general practice. J Am Geriatr Soc.2002;50:530-4.

5. Nasreddine ZS, Phillips NA, Bedirian V. The Montreal Cognitive Assessment, MoCA:a brief screening tool for mild cognitive impairment. J Am Geriatr Soc.2005;53:695-9.

6. Quinn TJ, McShane R, Fearon P, Young C, Noel-Storr A, Stott DJ.IQCODE for the diagnosis of Alzheimer's disease dementia and other dementias within a community setting. Cochrane Database Systematic Reviews.2013.CD010079.pub2

Figure 1: Flow diagram illustrating test completion and proportions completing and screening test positive for cognitive impairment



	AMT 0-10	GP-COG 0-9	MoCA 0-30	All tests
Completed test n	73	39	23	23
Screen positive n (%)	70 (96%)	27 (69%)	20 (87%)	20 (87%)
Median score (IQR)	6 (3-8)	4 (2-6)	13 (10-22)	