Tailoring the screening for cognitive impairment to the individual patient with Computerised Adaptive Testing (CAT)

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To examine whether it is possible to combine the sensitivity of neuropsychological tasks with the efficiency of brief cognitive instruments.

Ethical review	Approved WMO
Status	Pending
Health condition type	Structural brain disorders
Study type	Observational non invasive

Summary

ID

NL-OMON33824

Source
ToetsingOnline

Brief title
Computerised Adaptive Testing

Condition

- Structural brain disorders

Synonym
dementia

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: Ministerie van OC&W,Internationale Stichting Alzheimer Onderzoek

Intervention

Keyword: cognitive screening, dementia, efficiency, Item Response Theory

Outcome measures

Primary outcome

Duration of cognitive testing using CAT in comparison with the test duration of

the CAMCOG.

Diagnostic accuracy of cognitive testing CAT in comparison with conventional

cognitive testing (i.e. administering a fixed set of items to every patient).

Secondary outcome

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Study description

Background summary

The screening for and monitoring of cognitive decline in the elderly forms an important part of the diagnostic care provided in outpatient clinics and other clinical facilities. Because of time constraints, clinicians tend to opt for brief cognitive instruments such as the Mini Mental State Examination (MMSE). The MMSE is basically a set of standard cognitive tasks administered to every patient.

However, it is well-known that brief cognitive instruments such as the MMSE have reduced sensitivity in the prodromal or early stages of dementia. Previous research shows that longer cognitive instruments and neuropsychological tests have better diagnostic accuracy and precision in the early stages of dementia.

This research aims to combine the efficiency of short cognitive screenings with the validity of extensive cognitive and neuropsychological instruments. Instead of administering the same set of question to every individual patient, items with difficulty levels appropriate to the patient's impairment level will be selected, while too easy and too difficult items will be skipped.

This tailored individualised testing can be achieved with a technique called Computerised Adaptive Testing (CAT). Using CAT we aim to administer the tasks

with optimal diagnostic accuracy in the time span that is needed to complete a short cognitive screening.

Study objective

To examine whether it is possible to combine the sensitivity of neuropsychological tasks with the efficiency of brief cognitive instruments.

Study design

A prospective CAT validation study. We examine if a more extensive cognitive instrument (the CAMCOG, total administration time of about 25 minutes) can be administered in a time span similar to the time to administer a brief cognitive test instrument (the MMSE, total administration time of about 10 minutes) using CAT. We examine whether the CAT administration of the CAMCOG can reproduce the results of the entire CAMCOG item set. Subsequently, we examine whether the expansion of the CAMCOG with additional neuropsychological tasks to construct an itembank that is subsequently administered with CAT enhances the diagnostic accuracy and precision of the cognitive examination. We consider the clinical diagnosis of dementia as the reference standard. In both studies we compare the results of the cognitive examination with a heteroanamnestic questionnaire which assesses daily cognitive functioning (the IQ-Code) and control for the presence of depression.

Study burden and risks

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Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Patients visiting a neurologic outpatient clinic / memory clinic with memory complaints and other cognitive disorders who are suspected of dementia and who were consecutively referred by their GP or family physician.

Exclusion criteria

Patients and spouses / relatives with insufficient vision, audition, paresis of dominant hand, insufficient command of Dutch are excluded. In addition spouses / relatives who see the patient less than once a week or who are demented themselves. No informed consent

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Diagnostic

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-11-2008
Enrollment:	84
Type:	Anticipated

Ethics review

Approved WMO
Application type:	First submission
Review commission:	METC Amsterdam UMC

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL24695.018.08