بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / هناء محمد علي

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: ....

Validity of Ain-Shams Cognitive Assessment tool (ASCA) in diagnosing mild cognitive impairment (MCI) in comparison to Rowland Universal Dementia Assessment Scale (RUDAS)

Thesis
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List of Contents

List of Table

List of Figures

List of Abbreviations

Abb.	Full term
ACE III	*Addenbrooke's Cognitive Examination III*
ACE-R	*Addenbrooke's Cognitive Examination-Revised*
AD	*Alzheimer's disease*
ADL	*Activities of daily living*
aMCI	*Amnesic MCI*
APP	*Amyloid precursor protein*
ASCA	*Ain-Shams Cognitive Assessment tool*
ASTI	*Ain Shams Set Shifting for Illiterates*
Aβ	*Beta amyloid*
BADL	*Basic activities of daily living*
BG	*Bender Gestalt*
bvFTD	*Behavioral-variant frontotemporal dementia*
CDR	*Clinical Dementia Rating*
CERAD	*Consortium to Establish a Registry for Alzheimer's Disease*
CGI	*Clinicians' Global Impression of Change*
CN	*Confrontation naming*
CSF	*Cerebrospinal fluid*
DI	*Distractor interval*
DLB	*Dementia with Lewy bodies*
DR	*Delayed recall*
DRS	*Dementia Rating Scale*
EOAD	*Early-onset form of AD*

List of Abbreviations (Cont…)

Abb.	Full term
FTD	*Frontotemporal dementia*
GDS	*Geriatric depression scale*
IADL	*Instrumental activities of daily living*
lvPPA	*Logopenic variant PPA*
MCI	*Mild cognitive impairment*
MMSE	*Mini Mental State Examination*
MoCA	*Montreal Cognitive Assessment Tool*
MTs	*Metallothioneins*
naMCI	*Non-amnesic MCI*
nfvPPA	*Nonfluent variant PPA*
NGOS	*Non-governmental organizations*
NGOS	*Non-governmental organizations*
NIH EXAMINER	*National Institutes of Health Executive Abilities: Measures and Instruments for Neurobehavioral Evaluation and Research*
NMDA	*N-methyl-D-aspartate*
NPI	*Neuropsychiatric Inventory*
OTC	*Over-the-counter*
PD-MCI	*Parkinson's disease*
PPA	*Primary progressive aphasia*
PSD	*Post-stroke dementia*
Qmci	*Quick Screen for Mild Cognitive Impairment*
RUDAS	*Rowland Universal Dementia Assessment Scale*

List of Abbreviations (Cont…)

Abb.	Full term
SBI	*Subclinical brain infarction*
SCD	*Subjective cognitive decline*
svPPA	*Semantic variant PPA*
TMS	*Transcranial magnetic stimulation*
TYM	*Test Your Memory*
VaD	*Vascular cognitive impairment*
VL	*Verbal learning*
WHO	*World Health Organization*

INTRODUCTION

Dementia and MCI are becoming topics of increasing interest in the last decade, largely due to the phenomenon of demographic transition. Until January 2019, Egypt's elderly population had reached 6.5 million; 3.5 million males and three million females, according to the Central Agency for Public Mobilization and Statistics ***(CAPMAS, 2019).***

Dementia is a progressive neurocognitive disorder characterized by insidious cognitive and functional decline until death. The global prevalence of dementia is estimated at 5%−7% of people over 60 years ***(Prince et al., 2013)***. Mild cognitive impairment (MCI) often precedes dementia and is characterized by largely intact everyday function despite objective evidence of cognitive decline ***(Albert et al., 2011).***

Mild cognitive impairment (MCI) is a proximal risk factor for dementia ***(Knopman et al., 2015),*** falls ***(Muir et al., 2012)*** and higher health expenditure ***(Callahan et al., 2015)***. This risk increases proportionally with the number of impaired cognitive domains and symptoms severity ***(Knopman et al., 2015) (Hill et al., 2017).***

In a study conducted among older adults living in Mansoura city, it was found that the prevalence of MCI was 32%. The higher prevalence of MCI among Egyptians may be because of the fact that 56.5% of the Egyptian elderly are illiterates. Illiterates and residents with a lower educational level represented 72% of the study ***(Amer et al., 2012).***

There is a severe shortage in the validated screening tests for dementia and MCI in Arabic. Given the low levels of education among elderly in the Middle East and North Africa region, the commonly used screening instrument, the Mini Mental State Examination (MMSE), is not best suited especially for MCI screening. Alternatively, the Rowland Universal Dementia Assessment Scale (RUDAS) was especially designed to minimize the effects of cultural learning and education ***(Chaaya et al., 2016).***

In a study done for assessing the validity of RUDAS in patients with a Middle-Level Education in Lima, Peru. It was found that area under the receiver-operating characteristics curve of the RUDAS to discriminate between early dementia and MCI was 89.0% (optimal cutoff at <21), whereas between MCI and controls, it was 99.0% (optimal cutoff at <24). The RUDAS has acceptable psychometric properties performing well in its ability to discriminate controls from patients with MCI and early dementia ***(Custodio et al., 2019).***

As there is a rising need for a validated and reliable tool for assessment of MCI and dementia among low educated elderly population in Egypt, At Ain-Shams geriatrics and gerontology department, a new tool has been designed to fulfill this great need. It was named as ASCA "Ain-Shams Cognitive Assessment tool." ***(Elkholy et al., 2020).***

In this study we will test the diagnostic accuracy of ASCA in comparison to a worldwide validated tool (RUDAS) among a population of elderly attending geriatrics clinics.

AIM OF THE STUDY

Assessment of the accuracy of Ain-Shams Cognitive Assessment tool (ASCA), a newly designed neuropsychological battery to diagnose mild cognitive impairment (MCI) among Egyptian elderly, in comparison to Rowland Universal Dementia Assessment Scale (RUDAS), a well previously validated one.

DEMENTIA IN THE ELDERLY

The number of older adults is progressively increased all over the world, reaching 703 million people in 2019. In 2050, it is expected that the proportion of older adults will be doubled to 1.5 billion. The percentage of older adults aged 65 years or above increased from 6 percent in 1990 to 9 percent in 2019. This proportion is estimated to rise further to 16 percent by 2050, which means that one in six people in the world will be aged 65 years or above ***(Nations et al.,2019)***.

Memory concern is a common symptom in geriatric population. Geriatrician should differentiate between normal age-related cognitive changes and pathologic cognitive decline ***(Hugo & Ganguli, 2014).***

Dementia is a state of acquired cognitive impairment interfering with social and/or occupational functioning. Mild cognitive impairment (MCI) is an intermediate state between normal cognition and dementia with preserved functional abilities ***(Hugo & Ganguli, 2014).***

The term dementia has been replaced by major cognitive disorder and defined as follows:

A- Significant cognitive decline in one or more cognitive domains based on

1. Concern about significant decline expressed by an individual or reliable informant or observed by a clinician.

2. Substantial impairment documented by objective cognitive assessment.

B- Interference with independence in everyday activities.

C- Not exclusively during delirium.

D- Not better explained by another mental disorder. ***(Diagnostic and statistical manual of DSM-5, 2013).***

According to the World Health Organization (WHO) there are nearly 50 million people having dementia all over the world. The whole number is projected to reach 82 million in 2030 and 152 in 2050 ***(WHO, 2020)***. In Egypt, dementia prevalence ranged from 2.01% to 5.07%. Dementia increased with age, with the rapid increase among those aging ≥80. Also, its prevalence was higher among illiterate groups than among educated groups ***(Elshahidi et al., 2017)***.

There are several risk factors for dementia in older adults including *unmodifiable risk factors* such as age, genetics, ethnicity and sex. Women have greater risk of cognitive impairment may be because women live longer ***("2020 Alzheimer's disease facts and figures," 2020).***

On the other hand, there are some modifiable risk factors such as:

A. Smoking.

B. Body mass index.