COMMENTARY

Is it time to separate subjective cognitive complaints from the diagnosis of mild cognitive impairment?

ALEX J. MITCHELL

Leicester General Hospital, Leicester LE5 4PW and Honorary Senior Lecturer in Liaison Psychiatry, Department of Cancer & Molecular Medicine, Leicester Royal Infirmary LE1 5WW, UK

Address correspondence to: A. J. Mitchell. Tel: (+44) 0116 225 6218; Fax: (+44) 0116 2951951. Email: ajm80@le.ac.uk

Abstract

Subjective cognitive complaints (SCC) are currently considered to be a core feature of mild cognitive impairment (MCI). Yet the implications of including or excluding subjective complaints has not been previously considered. The key questions are how many health people complain of SCC compared to those with MCI? How is the epidemiology of MCI affected by the requirement for SCC? How is the prognosis of MCI influenced by SCC? and how should SCC be defined and measured?

Findings to date suggest that subjective complaints are one of many variables that comprise risk in individuals with MCI. Individuals who do not have subjective complaints and might not qualify under current definitions of MCI may still have a disorder that is of clinical significance. Despite a close association, SCC may be neither necessary nor sufficient for a diagnosis of either MCI or dementia.

Keywords: subjective memory complaints, mild cognitive impairment, dementia, elderly

Subjective cognitive complaints (SCC, also known as subjective memory complaints) refer to everyday concerns cited by people both with and without objective evidence of memory impairment. Such complaints are very common. It was found that 30% of the unimpaired elderly report that they have ‘trouble remembering things that have happened recently’ and a similar number have ‘trouble remembering where belongings are kept’ [1]. From the clinical perspective, there is likely to be an important difference between those who agree that they have slight difficulty on direct questioning and those who actively seek help for memory complaints.

Lately, the importance of SCC has been emphasised by its inclusion as a core feature of mild cognitive impairment (MCI) in recent consensus reports [2, 3]. Despite this apparent consensus, their inclusion remains controversial and many research groups have not used SCC when diagnosing MCI. One issue is that there is no single optimal method to elicit SCC; rather there are at least 20 competing subjective memory questionnaires, few of which have adequate validation. An even more fundamental issue is that whilst many studies document a relationship between subjective and objective memory complaints, many have failed to find such a relationship (for review see [4]). A further complication is that SCC can represent the concerns of a patient or a close family member. This might prove to be important as preliminary studies have found that the association between subjective ratings and future cognitive decline is stronger for informant rather than patient complaints [5]. Collectively, these issues have led to uncertainty about the clinical significance of patient-reported SCC and a question mark over the use of SCC in defining MCI. In order to clarify the significance of SCC in diagnosing MCI, four questions which may help disentangle this complex issue are suggested: How many health elderly people complain of SCC compared to those with MCI? How is the prevalence of MCI affected by the inclusion of SCC in the definition? How is the prognosis of MCI affected by inclusion of SCC? How should SCC best be defined?

How many health elderly people complain of SCC compared to those with MCI?

Several studies have examined the rate of memory difficulties in selected community samples, but few have done so in comparison to those with known MCI [4]. A complication is
that the rate of SCC is not stable but varies significantly over
time. A second complication is that the rate of SCC is strongly
influenced by age such that the rate in those aged under 65 is
about 20%, but this quickly rises to about 90% in those over
85 [6]. One of the best estimates of SCC comes from Crooks
and colleagues (2001) who studied a community sample aged
65 and older using the single question ‘Do you have severe
memory problems?’ [7] It was found that 38.6% of those
with dementia, 12.4% of those with loosely defined MCI
and 1% of non-cognitively impaired controls reported
SCC. Clearly, if one required SCC as part of the criteria for
MCI then by definition all such individuals would have SCC.

How is the prevalence of MCI affected
by SCC?

Ganguli and colleagues examined how many cases with
cognitive complaints satisfied the criteria for MCI. Out of
1,248 individuals in the Steel Valley study, 36.7% had SCC
but only 3.2% met full criteria for MCI [8]. Yet without the
requirement for SCC, 6.3% met criteria for MCI. In the
Iowa Established Populations for Epidemiologic Studies of
the Elderly consisting of 3,673 persons aged 65 or over,
Purser et al. (2006) found that 8.9% met strict criteria for
MCI compared to 14% who met criteria if SCC were not
required [9]. Luck and colleagues (2007) recently examined
the frequency of MCI in a primary care sample [10]. The
prevalence was 15.4% for strict criteria and 25.2% for
modified criteria. These studies suggest that the effect of
requiring SCC is to reduce the rate of MCI by 30–50%, so
that the overall prevalence is very close to that of dementia
itself. Yet, this does not necessarily mean that inclusion of
SCC is redundant, particularly if the prognosis of MCI is
strongly influenced by the presence of SCC.

How is the prognosis of MCI affected
by inclusion of SCC?

Regardless of any effect on the prevalence of MCI, most
clinicians want to know whether the risk of conversion
to dementia is affected. It has been suggested that SCC may
have special significance in that they may anticipate future
decline above and beyond baseline cognitive testing. Two
adequately powered studies have found little or no influence
of SCC on progression in those with no cognitive impairment
at baseline [9, 11]. In those with memory complaints and
objective evidence of decline, rates of conversion to dementia
are elevated even when the cause of cognitive decline is
unknown [12]. More recent studies also appear to show
that SCC adversely influences future decline in those with
baseline MCI. For example, Fisk and colleagues examined
the outcome of MCI in the 5 year Canadian Study of Health
and Aging (CSHA) [13]. There was a hierarchal risk of
progression to dementia: 71.4% of those meeting all criteria
for amnestic MCI converted compared to 68% in those
where deficits in function were allowed, 56% where no SCC
were required and 50% where neither was required. Indirect
evidence also comes from other long-term studies where
SCC were specifically not required in the definition of MCI.
Here the progression rate to dementia tends to be much
lower than expected.

An important finding was recently reported from
participants in the Kungsholmen project, interviewed 3 years
before developing dementia [14]. One-third reported neither
memory complaints nor objective cognitive deficits on the
Mini-Mental State Examination (MMSE) 3 years before
diagnosis. A further 16% had no complaints but evidence of
decline on the MMSE. Thus, although there is a definite
association with underlying cognitive disorders, subject
complaints are neither necessary nor sufficient for a diagnosis
of either MCI or dementia or the prediction of later dementia.

How should SCC be defined?

If SCC do have either diagnostic or prognostic significance,
what is the best way to elicit such complaints and are all
complaints of equal significance? In other words, should
all possible complaints be included under the rubric of
MCI or only certain ‘high-risk’ complaints? Grut et al
(1993) examined the significance of ‘slight’ versus ‘marked’
SCC [15]. Marked deficits were more discriminating of those
with MCI versus without MCI occurring in 19% versus 5%
compared with 30 and 28%, for ‘slight’ deficits. Clarinette
and colleagues (2001) compared 97 individuals with and
without SCC (regardless of MCI status) [16]. From a
small list of complaints, the most discriminating was word-
finding difficulty. This hints that not all types of cognitive
complaints are of equal significance and echoes the findings
of neuropsychological studies examining the significance
of specific types of cognitive test in diagnosing dementia
and MCI.

Conclusion

From this data, it is clear that the relationship between
subjective and objective cognitive impairments is complex.
looked categorically, there are four subgroups of
people depending on their subjective and objective
complaints (both, neither, subjective alone and objective
alone). Lautenschlager and colleagues found that the
proportion in each of these categories was 10.6, 40.1, 46
and 3.4%, respectively [17]. Risk of progression appears
to be ranked as follows: both>objective alone>subjective
alone>neither. Yet perceived forgetfulness is not always
a sinister finding. In the Maastricht Aging Study, 30% of
those with memory difficulties had little or no impairment
in activities of daily living and about 40% were not (or
hardly) worried about their forgetfulness. It seems likely that
in the absence of any other clinically concerning finding,
isolated SCC are unlikely to be clinically significant. In
association with other features, however, they do have added
value (for prediction of later dementia) but at a cost of
reducing the proportion of people who can be labelled
with MCI. In statistical terms, they increase the specificity
and positive predictive value but reduce the sensitivity and negative predictive value. There is also an implication for screening for dementia where a combination of subjective and objective tests could be more useful than either used alone [18, 19]. SCC may be useful diagnostically because simple questions concerning everyday cognitive abilities are more acceptable to patients than lengthy objective testing. Regarding the diagnosis of MCI, it might be useful to redefine the core criteria for MCI on the basis of objective deficits alone and then to specify the presence or absence of risk factors such as SCC, functional impairment, vascular disease and biological markers. Indeed, given adequate data a risk calculator might be possible akin to that already used to calculate cardiovascular risk [20]. There has been a great deal of useful research on SCC and MCI in the last 10 years, but no very large naturalistic studies that would allow accurate risk profiling, although such studies are underway. There have also been no studies examining how well SCC would differentiate those with MCI from those with depression, anxiety or other causes of cognitive complaints. Finally we have almost no information on the relative risk of different types of cognitive complaint, e.g. difficulties in memory compared with word-finding difficulty. Future studies on MCI should specify the degree and nature of both subjective and objective memory complaints.

Key points
- MCI is a condition of mixed aetiology which leads to dementia in about half of cases.
- Many but not all individuals with MCI report subjective cognitive difficulties.
- Otherwise healthy individuals with mild cognitive complaints are unlikely to be at high risk of future decline.
- A combination of subjective and objective deficits is a cause for concern.

References

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