

Manual of Screeners for Dementia

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Pragmatic Test Accuracy Studies

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ISBN 978-3-030-41635-5 ISBN 978-3-030-41636-2 (eBook)
<https://doi.org/10.1007/978-3-030-41636-2>

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To L F

*Pragmatism—is that all you have to offer?
[Tom Stoppard, Rosenkrantz and Guilden-
stern are dead]*

*It starts with Einstein. He shows that meas-
urement ... is not an impersonal event that
occurs with universal impartiality. It's a hu-
man act, carried out from a specific point of
view in time and space, from the one particu-
lar viewpoint of a possible observer.
[Michael Frayn, Copenhagen]*

Preface

This book emerges from a conjunction of interests first partially addressed in previous volumes. Just as *Diagnostic Test Accuracy Studies in Dementia* [3, 7], a general account of the theory and practice of diagnostic test accuracy studies (DTAS), developed from Chap. 2 of *Dementia in Clinical Practice: a neurological perspective* 2nd edition [2], so the current volume is a development of Chaps. 3–6 of *Dementia in Clinical Practice: a neurological perspective* 3rd edition [5]. Specifically, it aims to highlight experience in undertaking pragmatic DTAS of screening instruments relevant to clinical practice in a dedicated cognitive disorders clinic (some of which have been included in systematic reviews, meta-analyses, and national dementia guidelines). The fact that a previous volume on cognitive screening instruments [4] achieved more than 15000 chapter downloads in less than 18 months from publication suggests an ongoing interest in and use for such tests. These constitute one aspect of a broader interest in the diagnosis of dementia and cognitive impairment [8].

To facilitate comprehension and assimilation, data are summarised in a (hopefully) easily accessible, succinct and user-friendly way by means of a structured tabular format, which should also permit ease of comparison between tests. The pragmatic study design ensures high external validity and generalisability of these test results.

The metrological tables provide an opportunity not only to document established metrics of test discrimination, such as sensitivity and specificity, predictive values and likelihood ratios, but also to explore the potentialities of some novel empirically derived unitary metrics which have been recently defined and which have not featured in previous original or summative presentations of these studies. These are the following:

- the “likelihood to diagnose or misdiagnose” (LDM; [6, 9–11, 13–15]);
- the “summary utility index” (SUI) and its reciprocal, the “number needed for screening utility” (NNSU; [10, 11]).

These metrics are easy to calculate and, I suggest, may have heuristic value. Other infrequently used “number needed” metrics (to diagnose, to predict, to

misdiagnose) are also covered as these may have more intuitive appeal for clinicians, as more indicative of clinical relevance to the individual patient, than measures such as sensitivity and specificity and likelihood ratios.

An introductory chapter says more about these new metrics as they may be unfamiliar to many clinicians. The text then progresses to chapters on specific screeners which may be used in the assessment of suspected dementia and cognitive impairment, including: single-item cognitive screening questions; neurological signs; cognitive screening instruments of various lengths which may be administered to either patients or to informants; screeners for depression, functional impairment and sleep disorders; and combination and conversion of screeners. A consideration of existing and novel unitary metrics concludes the volume.

The data presented should allow clinicians to make decisions on whether these screeners are fit for purpose in their specific practice settings, being based on pragmatic diagnostic test accuracy studies. These studies were largely defined by the nature of the material encountered in a career dominated by clinical service, rather than research, issues. All were performed in accordance with STARD [1] or STARDdem [12] guidelines. All errors or misconceptions which remain in this book are entirely my own work.

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