CAMBRIDGE

Cambridge University Press
978-0-521-11820-0 - Measurement in Medicine: A Practical Guide
Henrica C. W. de Vet, Caroline B. Terwee, Lidwine B. Mokkink and Dirk L. Knol
Table of Contents
More information

Contents

	Preface	*page* ix
1	Introduction	1
	1.1 Why this textbook on measurement in medicine?	1
	1.2 Clinimetrics versus psychometrics	2
	1.3 Terminology and definitions	2
	1.4 Scope of measurements in medicine	3
	1.5 For whom is this book written?	4
	1.6 Structure of the book	5
	1.7 Examples, data sets, software and assignments	6
2	Concepts, theories and models, and types of measurements	7
	2.1 Introduction	7
	2.2 Conceptual models	7
	2.3 Characteristics of measurements	10
	2.4 Conceptual framework: reflective and formative models	13
	2.5 Measurement theories	17
	2.6 Summary	26
3	Development of a measurement instrument	30
	3.1 Introduction	30
	3.2 Definition and elaboration of the construct to be measured	33
	3.3 Choice of measurement method	35
	3.4 Selecting items	37
	3.5 Scores for items	46
	3.6 Scores for scales and indexes	49
	3.7 Pilot-testing	57
	3.8 Summary	60

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-11820-0 - Measurement in Medicine: A Practical Guide
Henrica C. W. de Vet, Caroline B. Terwee, Lidwine B. Mokkink and Dirk L. Knol
Table of Contents
More information

4	Field-testing: item reduction and data structure	65
	4.1 Introduction	65
	4.2 Examining the item scores	66
	4.3 Importance of the items	70
	4.4 Examining the dimensionality of the data: factor analysis	71
	4.5 Internal consistency	80
	4.6 Examining the items in a scale with item response theory	84
	4.7 Field-testing as part of a clinical study	91
	4.8 Summary	92
5	Reliability	96
	5.1 Introduction	96
	5.2 Example	98
	5.3 The concept of reliability	98
	5.4 Parameters for continuous variables	103
	5.5 Parameters for categorical variables	115
	5.6 Interpretation of the parameters	120
	5.7 Which parameter to use in which situation?	123
	5.8 Design of simple reliability studies	124
	5.9 Sample size for reliability studies	126
	5.10 Design of reliability studies for more complex situations	128
	5.11 Generalizability and decision studies	131
	5.12 Cronbach's alpha as a reliability parameter	137
	5.13 Reliability parameters and measurement error obtained by item response theory analysis	139
	5.14 Reliability and computer adaptive testing	141
	5.15 Reliability at group level and individual level	142
	5.16 Improving the reliability of measurements	144
	5.17 Summary	145
6	Validity	150
	6.1 Introduction	150
	6.2 The concept of validity	151
	6.3 Content validity (including face validity)	154
	6.4 Criterion validity	159
	6.5 Construct validity	169
	6.6 Validation in context	191
	6.7 Summary	196

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-0-521-11820-0 - Measurement in Medicine: A Practical Guide
Henrica C. W. de Vet, Caroline B. Terwee, Lidwine B. Mokkink and Dirk L. Knol
Table of Contents
More information

7	Responsiveness	202
	7.1 Introduction	202
	7.2 The concept of responsiveness	203
	7.3 Criterion approach	206
	7.4 Construct approach	211
	7.5 Inappropriate measures of responsiveness	215
	7.6 Other design issues	220
	7.7 Summary	221
8	Interpretability	227
	8.1 Introduction	227
	8.2 The concept of interpretability	228
	8.3 Distribution of scores of the instrument	228
	8.4 Interpretation of single scores	235
	8.5 Interpretation of change scores	241
	8.6 Summary	268
9	Systematic reviews of measurement properties	275
	9.1 Introduction	275
	9.2 Research question	276
	9.3 Literature search	278
	9.4 Eligibility criteria	282
	9.5 Selection of articles	283
	9.6 Evaluation of the methodological quality of the included studies	284
	9.7 Data extraction	291
	9.8 Content comparison	294
	9.9 Data synthesis: evaluation of the evidence for adequacy of the measurement properties	296
	9.10 Overall conclusions of the systematic review	300
	9.11 Report on a systematic review of measurement properties	302
	9.12 State of affairs	309
	9.13 Comprehensiveness of systematic reviews of measurement properties	310
	9.14 Summary	311
	References	315
	Index	328

© in this web service Cambridge University Press www.cambridge.org