

## **Basics of Functional Outcome and Measurements Scales**



# Basics of Functional Outcome and Measurements Scales

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Published by  
SCIENTIFIC PUBLISHERS (INDIA)  
5 A, New Pali Road, P.O. Box 91  
Jodhpur 342 001 (INDIA)  
E-mail: [info@scientificpub.com](mailto:info@scientificpub.com)  
Website: <http://www.scientificpubonline.com>

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ISBN: 978-93-94645-40-0 (HB)  
ISBN: 978-93-94645-41-7 (EBook)

Printed in India

## **Dedication**

**To My Parents**

**Smt. Manju Mathur**

**Sh. Suresh Mathur**

*for raising me to believe that  
anything is possible*

**And to My Guru Ji**

**Dr Harish Agarwal Sir M.D (Medicine)**

*Faculty, Regional Geriatric Centre*

*Dr S N Medical College, Jodhpur, Rajasthan*

*for making everything possible*



# Foreword

For more than four decades as a practising physician, particularly in geriatrics, I have realized the necessity of functional assessment in clinical practice.

As a medical teacher, I have been impressed by the talent of Dr Nikhil Mathur, whom I have known as a bright student, a sensitive practitioner and a keen research collaborator.

It's a pleasure to present his book "Basics of Functional Outcome and Measurement Scales". The book is a comprehensive collection of Medical Functional Outcomes and Measurement Scales frequently used in clinical practice and medical research. Dr Nikhil Mathur has gone deep into the subject and presented it in an easily understandable manner.

Besides clinical practitioners, the book will be helpful for physiotherapy students on the subject of Functional Outcome Measures (FOM).

The book is a valuable addition to the subject for undergraduate and postgraduate students, healthcare professionals and medical researchers.

**Dr Arvind Mathur**

*Editor, Journal of the Indian Academy of Geriatrics*

*Director, Asian Centre for Medical Education, Research & Innovation*

*Chairperson, Caregivers Asha Society*

*Ex-Principal and Controller, Professor of Medicine,*

*Dr S. N. Medical College, Jodhpur*

# Message

Felicitations and Blessings to Dr Nikhil Mathur that he had collaborated all medical functional outcome and measurement scales on a platform. Functional outcome and scales play important role in diagnosing patient at every aspect level. This book provides theoretical information about intended population on which scales has to be applied, reliability, validity, and responsiveness of all scales which is the main key point and feature of book.

Best Wishes for success of book.

**Dr Harish Agarwal**

*M.D (Medicine), Associate Professor*

*Regional Geriatrics Centre, Mathura Das Mathur Hospital*

*Dr S N Medical College, Jodhpur (Raj.)*



# Foreword

The health care delivery system in present times believes in evidence-based approach. To establish a fact into a true clinical science we rely on functional assessment, data collection and statistical analysis. The Functional Outcome Assessments are extremely important for planning the interventions in clinical research.

This book on functional assessment contains daily regular basic assessments and measurements, which are clinically used by professional therapists and students at their regular college, clinic, hospitals and during research studies.

This book “Basics of Functional Outcome and Measurement Scale” is the basic collection of all the scales and outcome measure, which helps the therapists and medicos to evaluate the current situation of patient and plan effectively with clinical reasoning.

The Book covers all the pattern of problems of patients coming to our regular OPD. It would be best for students enrolled for Bachelor of Physiotherapy course covering Functional and Outcome subject.

I would congratulate the author Dr Nikhil Mathur, who had been my student and a sincere professional for his persistent efforts. I also congratulate him and his team for gathering all the basic functional and outcome measurement scales at one platform.

Best wishes for success of this book.



**Prof. Umasankar Mohanty**

*B.P.T(Hons), MPT(Manual Therapy),*

*MIASP, MISEP, FAGE, PhD.*

*The Founder President of*

*Manual Therapy Foundation of India (MTFI)*

# Foreword

Functional outcome assessment, the innovative premier book written exclusively for the Physiotherapy for students and clinicians, provides a detailed information important for understanding of the outcome measures. Measures of the successful intervention is key in deciding. managing and changing the strategies of intervention for betterment of patient. The intervention program has to be planned and implemented appropriately as per changing status and needs of the patient. The referral to Physiotherapy treatments for variety of the disorders, diseases are increasing day by day. This book has taken care of growing public demands and inclination towards Physiotherapy. There was need of such content rich, focused book on the outcome measures specially dedicated towards needs of Physiotherapy students, clinicians and researchers.

The evidence-based practice (EBP) is the need of the current time. The outcome measurement is one of the critical areas in achieving the EBP. The book is rich resource for the Physiotherapy fraternity and will also help other health care professionals. With rapid advancement in health care and evolvement of newer techniques, such books becomes essential.

The technology of information sector is rapidly changing and plenty of information is easily available on various platform however the clarity and wisdom seems as rare as authentic information. This book will be welcomed by everyone in our speciality from novice to experienced one.

I appreciate the efforts of Dr. Nikhil Mathur & Dr. Harish Agrawal for their efforts to address this area. I have great pleasure in writing forward for the book.

**Dr. Sudeep Kale**  
*Professor, Terna Physiotherapy College, Navi Mumbai*  
*President, Maharashtra Physiotherapy Council*

# Prologue

“Necessity is the mother of innovation.” For me the lack of Functional Outcomes and Measurements Scales during my stint as a Physical Therapist lead me to ponder over compiling a book on this line. The result – Was pouring over thousands of papers, scouring various journal and surfing umpteen hours on net. The final product – a glossary where a Physical Therapy student or medical research fellow will find a needy reference for his needs. I am thankful to PhysioPedia for providing essentials.

As with all major works, I too was blessed by a number of individuals without whose guidance, the book wouldn't have seen the light of day. Foremost my sincere gratitude to Dr Harish Agarwal Sir (MD, Medicine) , a mentor, a friend, the backbone of this book. His guidance was akin to what Krishna's was for Arjun.

The blessings of my parents, the love and patience of my wife and encouragement by my soul (my younger brother) and his wife, children made my enduring task simple. A big thank you to them.

Currently there is no any specific book covering the basic functional scales at one platform. We had compiled these functional outcomes scales at one. The functional outcome measurement scales contains their theoretical part which include objective of scale, material and methodology to applying scale, Responsibility, Validity and Reliability of that specific scale on to the patient.

The functional outcome measures are essential component of assessment, planning and monitoring in research and treatment aspects. The chapters of book can further be included according to categories wise segments like: -

- Cardiopulmonary and Cardiovascular Functional Outcome Scales like: 2 Minute Walk Test, Borg Rating of Perceived Exertion, 6 Minute Walk Test, 10 Meter Walk Test, Glasgow Coma Scale etc.
- Mental Health Outcome Measures like: - Fear Avoidance Belief Questionnaire, Mental Health Outcome Measure for Physiotherapist in Clinical Practice, Nottingham Health Profile etc.
- Neurological Outcome Measures like – 10 Meter Walk Test, 2 Minute Walk Test, Action Research Arm Test, Arm Mobility Ability Test, Balance Evaluation System Test, Berg Balance Test, Box and Block Test, Coma Recovery Scale (Revised), Community Balance and Mobility Scale, Edinburgh Handedness Inventory, Falls Efficacy Scale – International, Functional Ambulation Category, Functional Gait Assessment, Functional Reach Test, Galveston Orientation Amnesia Test, Glasgow Coma Scale, Mass Attention Rating Scale, NIH Stroke Scale, Nine Hole Peg Test, Oswestry Disability Index, Parkinson's Disease Questionnaire, Progressive Supra Nuclear Palsy Rating Scale etc.
- Geriatric Outcome Measure – 10 Meter Walk Test, @ minute Walk Test, 30 Second Sit to Stand Test, 4 Item Dynamic Gait Index, Barthel Index, Berg Balance Scale, Community Balance and Mobility Scale, DASH Outcome Measure, Elderly Mobility Scale, Falls Efficacy Scale- International, Fear Avoidance Belief Questionnaire, Functional Gait Assessment, Functional Independence Measure, Functional Reach Test, Harris Hip Score, Hip Disability and Osteoarthritis Outcome Score, Katz ADL, Mental Health and Outcome Measure for Physiotherapist in Clinical Practice, Mini – Mental State Examination, Neck Disability Index, Oswestry

Disability Index, Oxford Hip Score, Oxford Knee Score, Physical Activity Scale for the Elderly, Sarc – F : A Simple Questionnaire to Rapidly Dispose Sarcopenia, Short Form McGill Pain Questionnaire, Time Up and Go Test, Tinetti Test, Tragus to Wall Test, VAS Scale, WOMAC – Osteoarthritis Index etc.

- Pediatric Measures – 2 Minute Walk Test, Bangla Club Foot Tool, Functional Ability Description tool, Gait and Lower Limb Observation of Pediatrics, Gross Motor Function Measure, Knee Injury and Osteoarthritis Outcome Score – Child, Pediatrics Balance Scale, Pirani Score, Revised Hammersmith Scale for Spinal Muscular Atrophy, Roye Score etc.
- Orthopedic Measurement Outcome Scales like: Neck Disability Index, Tragus to Wall Test, DASH Outcome Measure, Upper Extremity Functional Index, Lower Extremity Functional Index, 8-Item Sports Sub Scale, Foot and Ankle Ability Measure, Foot Function Index, Manchester Oxford Foot Questionnaire, Pirani Score, Roye Score, Harris Hip Score, Hip Disability and Osteoarthritis Outcome Score, Ibadan Knee / Hip Osteoarthritis Outcome Score, Knee Injury and Osteoarthritis Outcome Score – Adult, Knee Injury and Osteoarthritis Outcome Score – Child, 36 – Short form Survey etc.

Lastly, I would like to acknowledge the book designer Scientific Publisher – Sh. Tanay Sharma who give the final touches to my book.

Loads of heartfelt thanks to developers of these scales. I hereby confirm that the scales used are of the developers and they have the sole authority of copyright and that these scales would be used for students and researchers' awareness and updating their knowledge.

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