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Workbook for **Research** in Physiotherapy

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Workbook for **Research** in Physiotherapy



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Workbook for Research in Physiotherapy

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Dedicated to

Our Children, Swara, and Parva
&
Our Parents

Preface

The Workbook for Research will serve as your companion throughout the MPT program. This workbook provides a valuable resource for guiding both faculty and students to discuss and resolve various scenarios. It includes a list of questions and templates to help students go through the problem-solving process.

This workbook has been designed based on the collective experience of the authors. We encourage readers to write down their deadlines, presentation dates, submission dates, and any noteworthy insights or ideas related to research.

You can keep this workbook with you at all times and write down anything you believe will be helpful to you during your MPT program. This workbook will help you to be focused and encourage you to record your thoughts. Any ideas coming from different sources can be documented and organized systematically. You can record your personal experiences as a researcher and document them. By writing in this workbook, you can connect the dots and enhance your creativity. Make writing a habit to improve your writing skills. Always note the dates for any thoughts or events that you write down.

Templates in this workbook will help you stay organized, guide you, and enhance your productivity. We are confident that it will prove to be a valuable resource for physiotherapy researchers.

Tarpan H Shah
Hiral T Shah

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We sincerely appreciate the motivation we received from the students, faculty members, and non-teaching staff at Shrimad Rajchandra College of Physiotherapy, Uka Tarsadia University, Bardoli, Surat, Gujarat. Without their support, this would not have been possible.

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We would like to thank Mr Satish Kumar Jain (Chairman) and Mr Varun Jain (Managing Director), M/s CBS Publishers and Distributors Pvt Ltd for providing us the platform in bringing out the book. We have no words to describe the role, efforts, inputs and initiatives undertaken by Mr Bhupesh Aarora [Sr. Vice President – Publishing and Marketing (Health Sciences Division)] for helping and motivating us.

We are indebted to Dr Divya Gupta (PT) (Project Manager & Editorial Head – Physiotherapy) for her valuable support, suggestions and advice that have helped us in refining the text and making it more comprehensive.

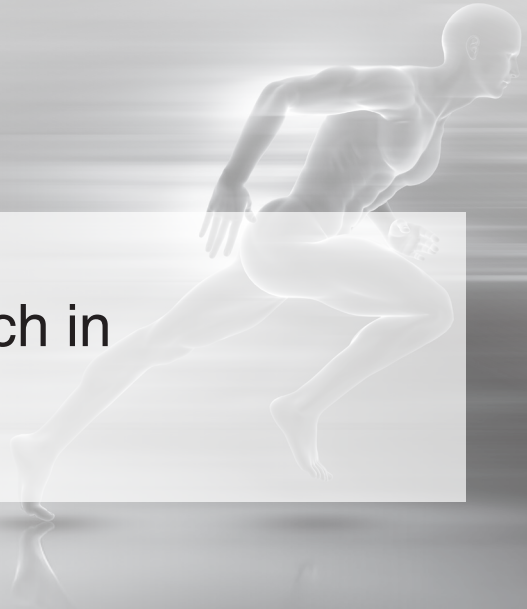
Last but not least, we sincerely thank the entire CBS team for bringing out the book with utmost care and attractive presentation. We would like to thank Ms Nitasha Arora (Assistant General Manager Publishing – Medical and Nursing), and Dr Anju Dhir (Sr. Product Manager and Medical Development Editor) for their publishing support. We would also like to extend our thanks to Ms Surbhi Gupta, Team Lead (Editorial), Mr Ashutosh Pathak (Assistant Production Manager) and all the production team members for devoting laborious hours in editing, designing and typesetting the book.

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Introduction to Research in Physiotherapy

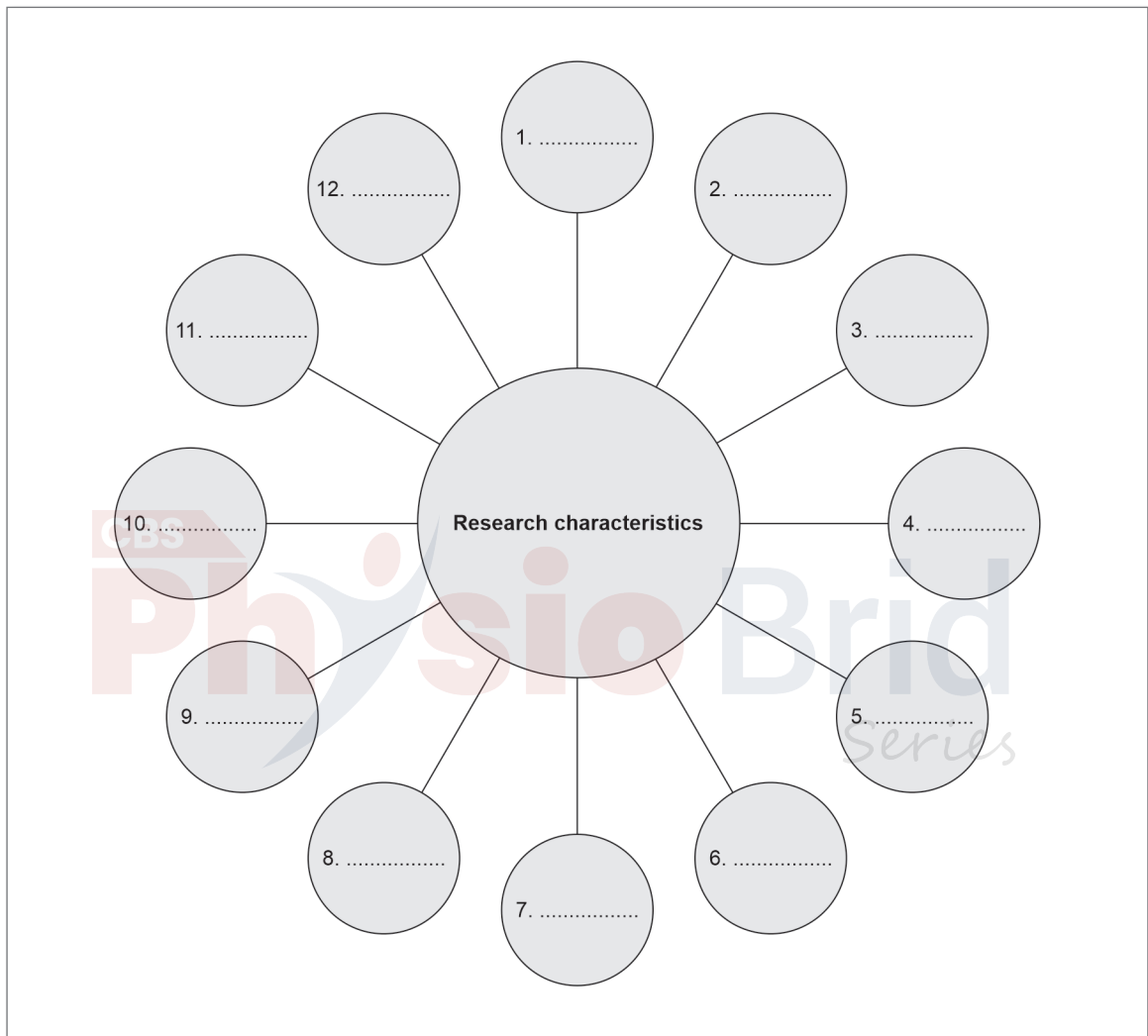
INTRODUCTION

Research in physiotherapy is a crucial field that enhances the understanding, development and application of treatments for physical dysfunctions, injuries and various health conditions.

Q 1. Define research.

Q 2. What are the objectives of research?

Q 3. What are the characteristics of research?



METHODOLOGIES AND FIELDS IN PHYSIOTHERAPY

Physiotherapy encompasses a broad range of topics and methodologies. Fields of physiotherapy specialization include the following but are not limited to:

- **Neurological physiotherapy:**
 - Rehabilitation techniques for neurological conditions such as stroke, Parkinson's disease and multiple sclerosis.
 - Use of neuroplasticity principles in treatment.
 - Development of assistive technologies for mobility and function.

- **Musculoskeletal physiotherapy:**
 - Treatment of musculoskeletal disorders including back pain, arthritis and sports injuries.
 - Biomechanical studies to understand movement dysfunctions.
 - Preventive strategies and ergonomics.
- **Cardiopulmonary physiotherapy:**
 - Rehabilitation strategies for patients with cardiovascular and respiratory conditions.
 - Exercise prescription and monitoring of population.
 - Effect of pulmonary rehabilitation on quality of life.
- **Pediatric and geriatric physiotherapy:**
 - Tailoring interventions for children with developmental disorders.
 - Addressing age-related changes in the elderly and promoting healthy aging.
 - Fall prevention programs and functional mobility in geriatrics.

Research Methodologies

Physiotherapy research employs a variety of methodologies, including:

- **Quantitative research:** Randomized controlled trials (RCTs), cohort studies, cross-sectional studies and longitudinal studies.
- **Qualitative research:** Interviews, focus groups, case studies and ethnographic research to understand patient experiences and perspectives.
- **Mixed-methods research:** Combining quantitative and qualitative approaches to provide comprehensive insights.
- **Laboratory-based research:** Biomechanics and motor control studies, often involving sophisticated motion analysis equipment.

Q 4. Write about different types of research along with descriptions and examples to complete the table below.

Types	Description	Example
Basic (pure) research	Focused on gaining new knowledge without immediate application.	Studying how muscles adapt to long-term stretching.
Applied research		
Descriptive research		
Analytical research		
Exploratory research		
Quantitative research		
Qualitative research		

Q 5. Enumerate the qualities of a good research and a good researcher.

Qualities of a good research	Qualities of a good researcher

KEY AREAS OF RESEARCH IN PHYSIOTHERAPY

Key areas of research in physiotherapy include:

- **Evidence-based practice:**
 - Developing and validating treatment protocols.
 - Systematic reviews and meta-analyses of existing treatments.
 - Clinical trials to test the efficacy and safety of interventions.
- **Rehabilitation techniques:**
 - Exploring new methods for rehabilitation postsurgery or injury.
 - Assessing the effectiveness of traditional techniques like manual therapy, exercise therapy and electrotherapy.
 - Innovations in robotic-assisted therapy and virtual reality-based rehabilitation.
- **Pain management:**
 - Investigating the mechanisms of pain and its management through physiotherapy.
 - Studying chronic pain conditions and the role of physiotherapy in alleviating pain.
 - Nonpharmacological interventions for pain relief.
- **Technological integration:**
 - Use of wearable technology and telehealth in physiotherapy.
 - Biofeedback mechanisms and their therapeutic applications.
 - Development of mobile apps for home exercise programs and patient education.
- **Health promotion and disease prevention:**
 - Role of physiotherapy in community health and wellness programs.

- Strategies for lifestyle modification and physical activity promotion.
- Impact of physiotherapy on public health outcomes.
- **Education and professional practice:**
 - Curriculum development and teaching methods in physiotherapy education.
 - Professional ethics, interprofessional collaboration and practice management.
 - Continuing education and lifelong learning for physiotherapists.

Research in physiotherapy is vital for the continuous improvement of patient care, the development of new and effective treatments, and the overall advancement of the field.

Q 6. What are the problems encountered by researchers in India?



Workbook for **Research** in Physiotherapy

Salient Features

- **Extensive Viva Question Bank:** Covers a broad range of commonly asked viva-voce questions across all sections of a research project.
- **Based on Real Examination Scenarios:** Reflects actual defense experiences to prepare students for the depth and direction of examiner queries.
- **Supports BPT, MPT, and PhD Research Defense:** Structured for thesis and dissertation presentations at all academic levels in physiotherapy.
- **Organized by Research Sections:** Questions are arranged chapter-wise—Introduction to Conclusion—for focused revision.
- **Promotes Critical Thinking:** Encourages rationale-based responses to strengthen conceptual clarity and analytical skills.
- **Presentation and Defense Tips Included:** Offers guidance on academic etiquette, handling questions, and managing presentation anxiety.
- **Flexible for All Levels:** Adaptable content suited to the complexity expected at undergraduate, postgraduate, and doctoral levels.
- **Ideal for Mock Viva Practice:** Useful for faculty-led mock sessions and peer-based formative assessments.

About the Authors



Tarpan H Shah, BPT, MPT (Cardiopulmonary), PhD, is presently working as Associate Professor and Head of Postgraduate and Research at Shrimad Rajchandra College of Physiotherapy, Uka Tarsadia University, Surat, Gujarat. With over 16 years of teaching and clinical experience, he is a distinguished alumnus of KLE Institute of Physiotherapy, Belgaum (BPT) and NITTE Institute of Physiotherapy, Mangaluru (MPT), holding top ranks at both college and university levels. He completed his PhD at Parul University, Vadodara, and also holds a Diploma in Nutrition and Health Education (DNHE) from IGNOU. He has authored 20 indexed publications, holds 3 copyrights, and has mentored over 210 research projects, including UG, PG, and PhD scholars. He is presently BOS member in 5 universities across India. He has conducted 19 workshops in Cardiopulmonary Physiotherapy, Pedagogy and Research, and organized over 140 COPD rehabilitation camps across Surat. Honored with the Nation Builder Award (2016), Best Senior Academician Award (2024), and India Medico Award (2025), he also shares academic insights through his YouTube channel “Tarpan Shah”. Renowned as a passionate and dynamic educator, his engaging teaching style is highly appreciated by the student community.



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