

COURSE ORIENTATION

**Rehabilitation Health Science Department
Master Program in Physical therapy
Tests and Measurements (RHS-503)**



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Tests and Measurements (RHS-503)

Mohammed T.A. Omar, Ph.D. PT, PGDCR,CLT
Associate Professor of Physical Therapy
CAMS_KSU

Mobile: +966542115404 KSU

Office phone number : 93597
Office number : 2074

E-mail: momamarar@ksu.edu.sa
: momamarar@cu.edu.eg
: Dr.taher_m@yahoo.com

COURSE ORIENTATION

Objectives

Course
Content

Assessment

Starting point

Teaching Methods

Course description

Course code &title	RHS503 : and Measurements
Credit hours	2
Course type	Lecture/lab activities
Course description	<p>This course provides students with a concise review of the basic principles of development of outcome measurements and important information about how to choose an outcome measures, and psychometric properties utilized for outcomes assessment, analyze common health and rehabilitation outcomes measures in terms of reliability, validity, clinical utility, and cost effectiveness.</p> <p>The core of this course includes a careful and comprehensive compendium of wide range of outcome measurements used in different clinical practices and research (e.g. orthopedic, neurology, pediatric, geriatric.). During this course, the students will study tests and outcome measurements that can be used in physical therapy to evaluate and verify what is normal or abnormal, with study of their application to develop skills concerning evaluation and measurements in various disability's conditions to enhance therapeutic intervention and evidence-bases practice</p>

Objective™

Describe the importance and benefits of using classification schemes and outcome measures to evaluate of Body Function and Body Structure, Activity, and Personal and Environmental Factors that influence Participation.

Identify strategies to facilitate the use of outcome measures in clinical practice.

Identify strategies to overcome common barriers to implementing outcome measurement in clinical practice

Objective™

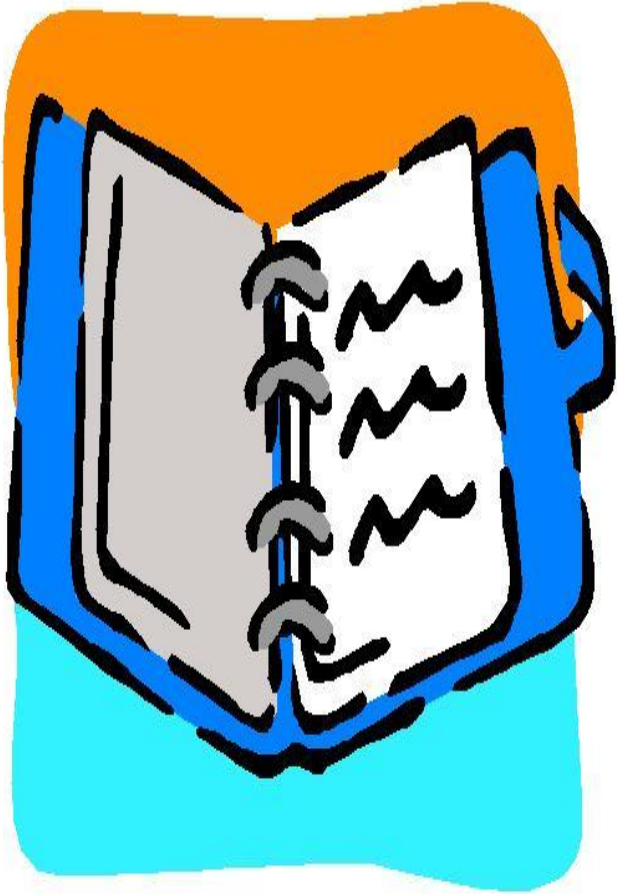
A diagram with a vertical label 'Objective™' on the left. Three horizontal rectangular boxes are connected to the label by lines. Each box contains a text description of an objective.

Assist in the choice of an outcome measurement and its subsequent use in clinical practice

Critically evaluate measurement properties of existing outcome measures for application in clinical practice, including validity, reliability, responsiveness, and clinical utility.

Increase student's capacity to select and implement appropriate standardized measures. This involves the use of online databases to find assessment tools and interpret their measurement properties and critically evaluate evidence about standardized tests and outcome measures

Course Contents



Course contents

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graph TD; A[Course contents] --> B[Theoretical parts (75%)]; A --> C[Practical part (25%)]
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Theoretical parts (75%)

Practical part (25%)



Introduction to outcome in rehabilitation

- Assessment as a Core Part of the Therapy Process
- Selection and Application of Terminology in clinical Practice (e.g. Assessment, Evaluation and Tests, scale, and Outcome Measurements)
- Benefits of Outcome Measurement
- Barriers and Facilitators of use Outcome Measurement in clinical practice
- Outcome classification system and International classification of function (ICF)

Module 1

Level of Measurements and Sources of Data Collections

- ☐ Measurement and Measurement Theory?
- ☐ Levels of Measurement?
 - Nominal Scales , Ordinal Scales , Interval Scales and Ratio Scales
 - Statistical concept used in measurement theory
 - Lab activities: Clinical Application of Concept of Measurement in clinical Practice

Standardization and Test Development

- Standardized Test and Un-Standardized Assessment
- Why Should Therapists Use Standardized Tests?
- Patient-reported outcome measures(PROMs) in physical therapy

Validity and Clinical Utility

- Definition of Validity
- Face Validity , Content Validity
- Construct Validity , Criterion-related Validity
- Clinical Utility
- Examining Validity and Clinical Utility Issues: Test Examples
- Applying Concepts of Validity to Your Own Practice

Module 2: Choosing an outcome measure

Reliability :Introducing the Concept of Reliability

- Reliability Coefficients and Standard Error of Measurement
- Introduction to Types of Reliability
- Test–retest Reliability, Inter-rater Reliability and Intra-rater Reliability
- Parallel Form Reliability and Internal Consistency
- Test Specificity and Sensitivity
- Floor and Ceiling Effects
- Reliability Statistics: Comparing Statistical Methods for Evaluating Reliability
- Applying Concepts of Reliability to Your Own Practice

Test Administration, Reporting and Recording

Step 1: Preparation for Testing

Step 2: Test Administration

Step 3: Scoring

Step 4: Analysis of Scores

Step 5: Interpreting Test Scores

Step 6: Decision-making in Light of the Interpretation of Test Scores

Step 7: Client Feedback About the Test Results and Implications

Step 8: Recording and Reporting Results

Case Study: [worksheet](#)

Module 2: Choosing an outcome measure

Evidence-Based Practice about diagnostic test and clinical measures

Implementation of Evidence-Based Practice of outcome measurements

How Do You Track Down the Best Evidence for outcome measurement

Apprising evidence about self –report outcome measures

Course modules: Modules 3

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graph TD; A[Course modules: Modules 3] --> B[Pain intensity as an outcome measurement in musculoskeletal conditions]; A --> C[Measuring outcomes in back and neck conditions]; B --> D[➤ visual analogue scale<br/>➤ Brief pain inventory questionnaire<br/>➤ Pain self-efficacy questionnaire (PSEQ)<br/>➤ Pressure Algometry]; C --> E[➤ Neck disability index<br/>➤ Neck pain and disability scale<br/>➤ Back pain functional scale<br/>➤ Roland-Morris disability questionnaire (RMDQ)<br/>➤ Oswestry disability index (ODI)<br/>➤ Quebec Back Pain Disability Scale];
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Pain intensity as an outcome measurement in musculoskeletal conditions

- visual analogue scale
- Brief pain inventory questionnaire
- Pain self-efficacy questionnaire (PSEQ)
- Pressure Algometry

Measuring outcomes in back and neck conditions

- Neck disability index
- Neck pain and disability scale
- Back pain functional scale
- Roland-Morris disability questionnaire (RMDQ)
- Oswestry disability index (ODI)
- Quebec Back Pain Disability Scale

Course modules: Modules3

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graph TD; A[Course modules: Modules3] --> B[Measuring outcome of lower extremity conditions]; A --> C[Measuring outcome of upper extremity conditions];
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Measuring outcome of lower extremity conditions

- Disabilities of the Arm, Shoulder and Hand (DASH)
- Shoulder Pain and Disability Index
- Upper Extremity Function Scale
- American shoulder and elbow surgeons (ASES)
- Action research arm test
- Patient Rated Tennis Elbow Test (PRTET)
- The Michigan hand questionnaire (MHQ)
- Jebsen-Taylor hand Function TEST (JTHFT)

Measuring outcome of upper extremity conditions

- Lower Extremity Functional Scale (LEFS)
- Foot and Ankle Ability Measure (FAAM)
- Western Ontario McMaster Osteoarthritis index (WOMAC)
- Knee injury and Osteoarthritis Outcome Score ([KOOS](#))

Short performance physical battery (SPPB)

Course modules: Modules 3

Muscles strength and performance outcome measurement

- Isokinetic
- Hand held dynamometer
- Grip and pinch strength

Joint range of motion as an outcome measurements

- Goniometric and liner measurement
- Inclinator Technique

Quality of life outcome measurement in patients with musculoskeletal conditions

- 36-short form questionnaire
- 12-short form questionnaire
- Arthritis impact measurement scale

- Class meetings will generally include lecture, discussion, and lab activities on Monday from 12-2:50.

Class Structure:



- Attendance is required. The class meets approximately 15 times for 3 hours each.
- Attendance will be taken each lecture.
- Students are expected to be in class, seated, on time.
- Each unexcused absence will result in a 1 point deduction off of your final average and tardies will result in a 0.5 point deduction

Attendance:



An "excused absence is defined as a documented university approved activity

Schedule of Assessment

Schedule of Assessment Tasks for Students During the Semester		
No	Assessment task	Scores
1	<p>Class participation and in class assignment :<u>In Class Assignments</u>:</p> <p>The assignments done in class will be based on the lecture information.</p> <p>Students will be allowed to use their notes and book to answer the questions</p>	10 points
2	Midterm writing exam (30-60 points written exam) The test will contain true/false, fill in the blank, multiple choice, matching, and an essay question.	20points
3	3.1. Research projects assignment	20%
	3.2. Clinical field application: Case study and data collection from clinical field	25%
4	Final writing exam (60-80 points written exam): The test will contain true/false, fill in the blank, multiple choice, matching, and an essay question.	25 %



REFERENCE

Required Text(s)

1. Finch E, Brooks D, Straford PW, Mayo N. Physical rehabilitation outcome measures; A guide to enhanced clinical decision making. 2nd. Ed., Lippincott, Williams & Wilkins, 2002
2. [Paul P, Jeremy F, Andrew C.](#) Outcome Measures in Orthopedics and Orthopedic Trauma, 2Ed
3. Stokes EK. Rehabilitation outcome measures. Churchill Livingstone; Number of pages: 1st Ed 200
- 4-.Electronic Materials, Web Sites etc. <http://www.rehabmeasures.org/default.aspx>



REFERENCE

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

Stevens JGA, Beurskens AJMH. Implementation of measurement instruments in physical therapist practice: development of a tailored strategy. *Phys Ther*. 2010; 90:953–961.

Pynsent PB, Fairbank JCT, Carr AJ, editors. *Outcome measures in orthopedics and orthopedic trauma*. 2nd ed. New York: Oxford University Press; 2004

Jette DU, Halbert J, Iverson C, et al. Use of standardized outcome measures in physical therapist practice: perceptions and applications. *Phys Ther*. 2009;89: 125–135.

Kyte DG, Calvert M, van der Wees PJ, ten Hove R, Tolan S, Hill JC. An introduction to patient-reported outcome measures (PROMs) in physiotherapy. *Physiotherapy*. 2015;101(2):119–125

Methods of communication

- Phone number: 0542115404
- E-mail : momamarar@ksu.edu.sa
Dr.taher_m@yahoo.com

<http://fac.ksu.edu.sa/momamarar/home>

Office number 2074

Office phone 93597

Office hours:

- Sunday 10-1
- Monday 9-12
- Tuesday 11-1

