University of Florida College of Public Health & Health Professions Syllabus RSD 7752 Measurement Development for Health and Rehabilitation (2 credit hours)

Summer C: 2023 Delivery Format: Online Tuesdays Periods 7 (5:00 -6:15 PM)

Instructor Name: Dr. Jamie Pomeranz, Clinical Professor

Phone Number: 352-494-3992

Email Address: Pomeranz@phhp.ufl.edu

Office Hours: By Appointment

Preferred Course Communications: UF email, see above.

Prerequisites: PHC 6052 Introduction to Biostatistical Methods, or CLP 6527 Measurement, Research Design

and Statistics I, or equivalent

PURPOSE AND OUTCOME

Course Overview: Students will apply qualitative and quantitative approaches to develop and pilot a hypothetical measure relevant for health, rehabilitation, or public health. Students will apply concepts of measurement validity and reliability to design a construct and related items to measure individual, group, or population outcomes. Students will practice qualitative approaches for measurement development and gain knowledge of quantitative approaches to psychometric testing. The course will also review frameworks to enhance the usability and adoption of measures.

Course Objectives and/or Goals

- 1. Critically review research literature on measurement development, validation, and implementation in health, rehabilitation, and public health.
- 2. Demonstrate the use of qualitative methods to elucidate a measurement construct and design items to operationalize the construct.
- 3. Describe quantitative approaches to evaluate the psychometric properties of an instrument.
- 4. Develop and pilot an instrument to measure an outcome relevant to the fields of health, rehabilitation, or public health.
- 5. Design a research study to evaluate measurement validity and reliability.

DESCRIPTION OF COURSE CONTENT

This course sequentially will walk you through the process of developing and piloting a hypothetical measure relevant for health, rehabilitation, or public health. This course uses didactic instruction, discussion, and hands-on experiences to provide students with the knowledge and skills needed to complete this process. To be prepared and actively contribute to in class activities, readings should be completed before class. Students are encouraged to choose a construct and outcome that is individualized to their course of study, and that will prepare them to complete independent research in the future. Measures developed may be used for descriptive/experimental research, intervention, or implementation/community contexts. The interdisciplinary approach used in this class will enhance students' capacity to address ongoing and emerging local, regional, and global health and participation challenges.

Course Materials and Technology

Required Textbook

DeVellis, R.F. (2017). Scale development theory & application (4nd ed.). Sage Publications, Inc. Thousand

Other readings are listed in the topical outline/course schedule and posted on Canvas.

Required Equipment

Computer, tablet, or smartphone with high-speed internet access.

For technical support for this class, please contact the UF Help Desk at:Learning-support@ufl.edu, (352) 392-HELP (option 2), or https://lss.at.ufl.edu/help.shtml

For technical support for this class, please contact the UF Help Desk at:

- helpdesk@ufl.edu
- (352) 392-HELP select option 2
- https://helpdesk.ufl.edu/

Topical Outline	/Course Schedule	
Week	Topic & Class Activities	Readings/ Assignments
1 May 9, 2023	Introduction to Measurement/ What's a construct? - Course & assignment overview - Lecture - Activity: Critical review of measures- are they really measuring what they say? - Discussion: The measurement development process	Chapter 1 Kaplan, R. M., & Hays, R. D. (2022). Health-related quality of life measurement in public health. <i>Annual review of public health, 43,</i> 355-373. https://doi.org/10.1146/annurev-publhealth-052120-012811 Magasi, S., Wong, A., Gray, D. B., Hammel, J., Baum, C., Wang, C. C., & Heinemann, A. W. (2015). Theoretical foundations for the measurement of environmental factors and their impact on participation among people
2	Measurement Validity and	with disabilities. <i>Archives of Physical Medicine and Rehabilitation</i> , <i>96</i> (4), 569-577. https://doi.org/10.1016/j.apmr.2014.12.002 Chapter 2 8. 3
May 16, 2023	Measurement Validity and Reliability - Lecture - Activity: Identifying validity and reliability arguments/evidence - Discussion: Construct Development	Chapter 2 & 3 Messick, S. (1998). Test validity: A matter of consequence. Social Indicators Research, 45(1), 35-44. https://link.springer.com/article/10.1023/A:1006964925094 Terwee, C. B., Prinsen, C., Chiarotto, A., De Vet, H., Bouter, L. M., Alonso, J., & Mokkink, L. B. (2018). COSMIN methodology for assessing the content validity of PROMs—user manual. Amsterdam: VU University Medical Center. https://cosmin.nl/wp-content/uploads/COSMIN-methodology-for-content-validity-user-manual-v1.pdf
3 May 23, 2023	Equity and Diversity in measurement - Lecture - Activity: Accessibility & usability of self-reported instruments - Discussion: Cross Cultural	APA Guidelines: https://www.apa.org/about/policy/guidelines-assessment-intervention-disabilities.pdf Epstein , J., Santo, R. M., & Guillemin, F. (2015). A review

	. 10.10	
	validity opportunities and challenges in health, rehabilitation, and public health	of guidelines for cross-cultural adaptation of questionnaires could not bring out a consensus. <i>Journal of clinical epidemiology</i> , 68(4), 435-441. https://doi.org/10.1016/j.jclinepi.2014.11.021
May 30, 2023	Translating Concepts into Questions Discussion: Benefits and limitations of different item development approaches Activity: Item development using qualitative methods Activity: Item development using literature review Rating Scales and Methods of	Chapter 4 DeWalt, D. A., Rothrock, N., Yount, S., & Stone, A. A. (2007). Evaluation of item candidates: the PROMIS qualitative item review. <i>Medical care</i> , <i>45</i> (5 Suppl 1), S12. Bray, K., Fisher, A. G., & Duran, L. (2001). The validity of adding new tasks to the Assessment of Motor and Process Skills. <i>The American Journal of Occupational Therapy</i> , <i>55</i> (4), 409-415.
June 6, 2023	Instrument Delivery - Lecture: Rating scales in self- reported measures - Activity: Rating scale design	Chapter 5 Tourangeau, R., Couper, M. P., & Conrad, F. (2007). Color, labels, and interpretive heuristics for response scales. <i>Public Opinion Quarterly</i> , <i>71</i> (1), 91-112. https://doi.org/10.1093/poq/nfl046 Gries, K., Berry, P., Harrington, M., Crescioni, M., Patel, M., Rudell, K., & Vernon, M. (2018). Literature review to assemble the evidence for response scales used in patient-reported outcome measures. <i>Journal of patient-reported outcomes</i> , <i>2</i> (1), 1-14. https://doi.org/10.1186/s41687-018-0056-3
6 June 13, 2023	Lecture: IRT 101 for measurement development Activity: Ranking the relative difficulty of measurement items Activity: Instrument development feedback	Due June 13: Literature Review Assignment Chapter 7 Jette, A. M., & Haley, S. M. (2005). Contemporary measurement techniques for rehabilitation outcomes assessment. <i>Journal of Rehabilitation Medicine</i> , 37(6), 339-345. Bring an initial draft of your instrument to class. This includes a draft measurement model, example items, and response scale
7	Break Week No Class	
8 June 27, 2023	Interviewing: Procedures - Lecture: Cognitive interview procedures - Activity: Cognitive interview role play	Chapter 8 Kurtzman, R. T., Vereen, R. N., Mendel Sheldon, J., Adams, E. T., Hall, M. G., Brewer, N. T., & Noar, S. M. (2022). Adolescents' understanding of smoking and vaping risk language: Cognitive interviews to inform scale development. <i>Nicotine & Tobacco Research</i> . https://doi.org/10.1093/ntr/ntac127
9 July 4, 2023	Independence Day	Due July 3: Instrument Development Assignment

		No Class
10	Factor Analysis	Chapter 6
July 11, 2023	 Lecture: Factor analysis in instrument development Discussion: Strategies to elicit quality cognitive interviewing data 	Helfrich, C. D., Li, Y. F., Sharp, N. D., & Sales, A. E. (2009). Organizational readiness to change assessment (ORCA): development of an instrument based on the Promoting Action on Research in Health Services (PARIHS) framework. <i>Implementation science</i> , <i>4</i> (1), 1-13. https://doi.org/10.1186/1748-5908-4-38
9 July 18, 2023	Cognitive Interviewing: Analyzing results - Activity: Hands on data analysis - Discussion: Benefits and limitations of quantitative vs. qualitative analytical approaches	Your cognitive interview results should be de-identified and entered into the cognitive interview coding excel template (posted on Canvas) by July 17 Kramer, J. & Schwartz*, A. (2017). Refining the Pediatric Evaluation of Disability Inventory—Patient-Reported Outcome (PEDI-PRO) item candidates: Interpretation of a self-reported outcome measure of functional performance by young people with neurodevelopmental disabilities. Developmental Medicine and Child Neurology, 59(10), 1083- 1088. doi: 10.1111/dmcn.13482.
9 July 25, 2023	The Delphi Method - Lecture: The delphi method - Activity: Designing a delphi method for measurement development	Terwee, C. B., Prinsen, C. A., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., & Mokkink, L. B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome measures: a Delphi study. <i>Quality of Life Research</i> , <i>27</i> (5), 1159-1170. Hepworth, L. R., & Rowe, F. J. (2018). Using Delphi methodology in the development of a new patient-reported outcome measure for stroke survivors with visual impairment. <i>Brain and Behavior</i> , <i>8</i> (2), e00898. https://doi.org/10.1002/brb3.898
9 July 31, 2023	- Activity: COSMIN evaluation of validity and reliability	Read a measurement development paper relevant to your field. Examples include: Savoia, E., Testa, M. A., Biddinger, P. D., Cadigan, R. O., Koh, H., Campbell, P., & Stoto, M. A. (2009). Assessing public health capabilities during emergency preparedness tabletop exercises: reliability and validity of a measurement tool. <i>Public Health Reports</i> , <i>124</i> (1), 138-148. doi: 10.1177/003335490912400117 Hahn, E. A., DeVellis, R. F., Bode, R. K., Garcia, S. F., Castel, L. D., Eisen, S. V., & Cella, D. (2010). Measuring social health in the patient-reported outcomes measurement information system (PROMIS): item bank development and testing. <i>Quality of Life Research</i> , <i>19</i> (7), 1035-1044. https://doi.org/10.1007/s11136-010-9654-0
9 July 31, 2023	Presentations	Due July 31: Final paper

Additional Academic Resources

- <u>Career Connections Center</u>: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- <u>Library Support</u>: Various ways to receive assistance with respect to using the libraries or finding resources
- <u>Teaching Center</u>: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.
- Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- Student Complaints On-Campus: <u>Visit the Student Honor Code and Student</u>
 <u>Conduct Code webpage for more information</u>.
- o On-Line Students Complaints: View the Distance Learning Student Complaint Process.

ACADEMIC REQUIREMENTS AND GRADING

Course assignments are designed to scaffold the process of measurement development. Each assignment will support the student in their process to develop and pilot a measure. All assignments are submitted on the course canvas site, uploaded as word documents or pdfs. Rubrics for all assignments are posted on canvas. Students are encouraged to use office hours to discuss assignment ideas and assignment progress.

Assignments

1. Construct Development Assignment: Due May 30, 2023

You are required to complete a one to two page summary (single space, 12 Times New Roman) of your selected construct. The construct you select will be the basis for the instrument you will develop throughout this course. Your summary should include the following:

- a. The construct identified (i.e. Parental satisfaction with rehabilitation services, health beliefs about medical marijuana use).
- b. Define your construct
- c. Variables/subscales or sub concepts to measure
- d. Describe your target population.
- 2. Literature Review Assignment: Due June 13, 2023. Now that you have identified your construct, you are going conduct a targeted review the literature for instruments that measure the same or similar constructs. For each instrument reviewed, report the definition of the construct, the response approach, the items/measures, the intended population and context of use, and any reported psychometrics. Across measures, critically review the way in which the construct is defined, operationalized and measured, and identify any gaps or limitations. This brief literature review should be 2-3 pages double spaced (not including the citation list), 12 Times New Roman, citing any relevant literature that supports the construct.

3. Measurement Development Assignment: Due July 3, 2023.

Building from assignments 1 and 2, and following best practices in measurement development, construct a measure/instrument. The measure should include items (grouped by subscale if appropriate), response scale, administration directions. If a self-reported measures, specify design factors to enhance usability and accessibility.

4. Cognitive Interviewing Assignment: Due July 25, 2023.

You will be administer your instrument to three people, using a cognitive interview approach. The goal of this assignment is to gain experience completing the cognitive interviewing process. This is a class assignment and IRB is not necessary. This does mean that you cannot publish or present the data outside of this class. You do not have to administer your measure to your target population.

You will ask five questions for each item in your instrument:

- Comprehension: What does this question mean to you?"
- Frame of reference: What were you thinking about while answering?
- Recall: How did you figure your answer to that?
- Confidence: How certain are you about your response?
- Paraphrase: Please paraphrase the question
- Overall: What is your overall impression of the instrument?

You should record your session with each respondent. You do not need to transcribe the responses, however you will need to write up a summary of responses for each question. Turn in your summary of responses using a word document, excel table, or other format that works for you and your measure.

5. Final Project and Presentation: Due July 31, 2023.

This final paper will integrate and build on assignments 1-4 to develop a proposed study to design and validate your measure. You will write up and present the results of your administration. Your paper should include the following sections:

- Construct: definition of the construct (1 page; incorporate feedback from assignment 1)
- Literature review of the construct and other measures (2-3 pages; incorporate feedback from assignment 2)
- Measure Description: Describe your measure and the measurement model used to
 operationalize the construct. Describe subscales and response approach. (< 1 page, incorporate
 feedback from assignment 3. Attach the full measure to the end of the report)
- Development Procedure: Describe your cognitive interview procedures, analysis, and results. If needed, design other qualitative development procedures you would use to refine your measure and items/variables. (1-2 pages; incorporate feedback from assignment 4)
- Psychometric Validation: Design a study to validate your measure. Include the measurement approach used and justification, sample characteristics and size, procedures to administer the instrument, and the proposed analysis. (3-4 pages)
- Discussion: 1-2 page reflection on your experience developing and administering your instrument.

You will also prepare a 10-minute PowerPoint presentation depicting your entire paper.

Grading

Requirement	Due date	Total points/ % of final grade
Construct Development Assignment	5/30/23	10
Literature Review Assignment	6/13/23	15
Measure Development	7/3/23	10
Cognitive Interview Assignment	7/25/23	15
Final Paper/Presentation	7/31/23	50
Total:		100

Point system used (i.e., how do course points translate into letter grades).

Example:

Percentage	Letter
Earned	Grade
93-100	Α
90-92	A-

87-89	B+
83-86	В
80-82	B-
77-79	C+
73-76	С
70-72	C-
67-69	D+
63-66	D
60-62	D-
Below 60	Е

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0 based on 5000 level courses and above to graduate. A grade of C counts toward a graduate degree only if based on credits in courses numbered 5000 or higher that have been earned with a B+ or higher.

Letter	Grade
Grade	Points
Α	4.0
A-	3.67
B+	3.33
В	3.0
B-	2.67
C+	2.33
С	2.0
C-	1.67
D+	1.33
D	1.0
D-	0.67
Е	0.0
WF	0.0
I	0.0
NG	0.0
S-U	0.0

More information on UF grading policy may be found at:

http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Exam Policy

Policy Related to Make up Exams or Other Work

Please note: Any requests for make-ups due to technical issues MUST be accompanied by the UF Computing help desk (http://helpdesk.ufl.edu/) correspondence. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

Policy Related to Required Class Attendance

Please note all faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details:

https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance). Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

INCLUSIVE LEARNING ENVIRONMENT

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu

To create as inclusive a learning environment as possible, I will work to ensure that the classroom environment is conducive to the sharing of ideas, allowing students to explore relationships among course material, personal, and social experiences. I strive to teach content objectively and create space for a respectful dialogue of ideas related to the impact of race, gender identity, sexual orientation, disability status, age, (etc.) on the topics taught in class. I seek to nurture a supportive peer culture both inside and outside of the classroom, and expect that students will treat each other in caring, empathic, and respectful ways.

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office http://www.dso.ufl.edu within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

Support Services for Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The **Counseling and Wellness Center** 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: http://www.counseling.ufl.edu. On line and in person assistance is available.
- **U Matter We Care** website: http://www.umatter.ufl.edu/. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The **Student Health Care Center** at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: https://shcc.ufl.edu/

- Crisis intervention is always available 24/7 from: Alachua County Crisis Center: (352) 264-6789 http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx
- University Police Department: <u>Visit UF Police Department website</u> or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111
 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health
 Emergency Room and Trauma Center website.

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/

http://gradschool.ufl.edu/students/introduction.html

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Recording Within the Course:

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate,

distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Online Faculty Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Policy Related to Guests Attending Class:

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are **not** permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy:

http://facstaff.phhp.ufl.edu/services/resourceguide/getstarted.htm