UNIVERSITY OF PITTSBURGH
Department of Health and Human Development (Fall 2024)

HHD 3400: Advanced Research Methods in Movement Science
Instructor: Duck-chul Lee (DC Lee), PhD
Office: Physical Activity Research Center (PARC): 32 Oak Hill Court, Room 200
Class Schedule: Fridays, 12:00pm – 12:50pm
Class Location: PARC Classroom 230
Office Phone & Email: 412-383-4004; dclee@pitt.edu
Office Hours: by appointment

Textbook: None

Additional Readings: Reading will be assigned via weekly emails.

Objectives

- Practice critical evaluation of research articles
- Gain exposure to advanced methods in research, study design, statistics, and physical activity and health
- Present and provide feedback for scientific proposals or other presentations
- Develop academic debating skills

Grading: Students will be given a letter grade. Grading will be based on:

1. **Presentations:** Students will be required to critically evaluate articles and present to peers and members of the faculty attending this course. Students will follow the Presentation Guidelines (see below) for talking points to describe the article and lead the active discussion in the classroom.
2. **Attendance/participation:** Students will be expected to attend class every week. Students should arrive having read the assigned article(s). After 2 unexcused absences, each additional absence will result in a letter grade reduction in your grade. If you will be unable to attend class and would like an excused absence, please submit your request via email to the instructor in advance.

There will be no exams.

Presentation Guidelines

Presenters need to prepare by reading the article and others in the literature to understand the context of the article being presented. Use the below bullet points for Study Description. Attendees will be instructed not to interrupt except for points of clarification or discrete questions. ***Presenters should email their paper to all class attendants (e.g., instructor, students) at least 1 week before their presentation.***

Part 1: Study Description by presenter (present for no more than 15 minutes):

1. Who is the first Author (title/position, institution, how many total and first author papers found in PubMed, key papers, research area)?
2. Rationale – why did the authors conduct this research (from intro usually)?
3. Objective/Hypothesis
4. Study design (e.g. randomized controlled trial [RCT], cohort study)
5. Study participants (number, age, major inclusion/exclusion criteria)
6. Measurement of independent (exposure) and dependent (outcome) variables
7. Exercise training program (e.g., frequency, duration, intensity) for exercise studies
8. Results (may refer to tables/figures)
9. Brief take home finding
10. Discussion of major limitations and strengths

Part 2: Discussion by presenter (discuss following questions with audience):

1. What are feasible things that could have been done to improve this study?
2. Describe how these results could translate into clinical practice/people's life
3. Inspired by this study, what is the research that you/your research group/our center could conduct to add to the literature in this area?

Part 3: Discussion by students:

1. Student question and discussion (**each student, except presenter, should bring one question and lead discussion**)

Paper Selection Guidelines

1. Research paper found in PubMed: http://www.ncbi.nlm.nih.gov/pubmed/
2. Published in the last 10 years in a journal with the most recent Journal Impact Factor ≥5 based on e.g., Web of Science: https://jcr.clarivate.com/jcr/home?app=jcr&referrer=target%3Dhttps:%2F%2Fjcr.clarivate.com%2Fjcr%2Fhome&Init=Yes&authCode=null&SrcApp=IC2LS
3. Recommend either randomized controlled trial (RCT), prospective cohort study, or systematic review (meta-analysis) paper (a cross-sectional study is not recommended unless well justified).
4. Recommend that cohort papers have ≥500 participants (sample size), and RCT papers have ≥100 participants (total) with an intervention duration ≥6 months.
5. Examples of good journals: *New England Journal of Medicine / Lancet / Journal of the American Medical Association (JAMA) / British Medical Journal / European Heart Journal / Circulation / Journal of the American College of Cardiology (JACC) / Annals of Internal Medicine / British Journal of Sports Medicine*
6. You can choose papers related to your own research interests, thesis/dissertation, lab projects, or hot-off-the-press articles in the field of physical activity and health.

**If not sure about paper selection, ask the instructor in the classroom or via email.*

Academic Integrity

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators. To learn more about Academic Integrity, visit the Academic Integrity Guide for an overview of the topic. For hands- on practice, complete the Academic Integrity Modules.

Disability Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services (DRS), 140 William Pitt Union, (412) 648-7890, drsrecep@pitt.edu, (412) 228-5347 for P3 ASL users, as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Weekly Topics

Date	Topic	Presenter
8/30/2024	How to read physical activity research data	Dr. DC Lee
9/6/2024	Effect of exercise training for five years on all cause morality in older adults-the Generation 100 Study: randomized controlled trial. Stensvold et al. *BMJ* (2020)	Dr. DC Lee
9/13/2024	Prognostic value of grip strength: findings from the Prospective Urban Rural Epidemiology (PURE) study. Leong et al. *Lancet* (2015)	Dr. DC Lee
9/20/2024	Push notifications from a mobile app to improve the body composition of overweight or obese women: randomized controlled trial. Hernández-Reyes et al. *JMIR Mhealth Uhealth* (2020)	Britney Beatrice
9/27/2024	**PARC Seminar**: Dr. Matthew Buman. Professor at Arizona State University	Dr. Matthew Buman
10/4/2024	The School of Education's Annual PhD Student Milestone Day (11:00am-1:30pm at Posvar 5601)	Dan Neofes and Britney Beatrice
10/11/2024	The effect of resistance exercise on sleep: A systematic review of randomized controlled trials. Kovacevic et al. *Sleep Med Rev*. (2018)	Jiyeon Yoon
10/18/2024	A co-designed mHealth programme to support healthy lifestyles in Māori and Pasifika peoples in New Zealand (OL@-OR@): a cluster-randomised controlled trial. Mhurchu et al. *Lancet Digit Health*. (2019)	Ryan Osal
10/25/2024	**Conference Abstract Topic Discussion** (ACSM Annual meeting abstract submission deadline: 11/13/2024)	
11/1/2024	Sugar-sweetened or artificially-sweetened beverage consumption, physical activity, and risk of cardiovascular disease in adults: a prospective cohort study. Pacheco et al. *Am J Clin Nutr.* (2024)	Britney Beatrice
11/8/2024	Association between parent and child physical activity: a systematic review. Petersen et al. *Int J Behav Nutr Phys Act.* (2020)	Carly Williamson
11/15/2024	Exercise training and resting blood pressure: a large-scale pairwise and network meta-analysis of randomized controlled trials. Edwards et al. *Br J Sports Med.* (2023)	Dan Neofes
11/22/2024	Diurnal patterns of accelerometer-measured physical activity and sleep and risk of all-cause mortality: a follow-up of the National Health and Nutrition Examination Surveys (NHANES). Wang et al. *Int J Behav Nutr Phys Act.* (2024)	Jiyeon Yoon
11/29/2024	Thanksgiving Holiday (No class)	
12/6/2024	Effects of aerobic and resistance training on hemoglobin A1c levels in patients with type 2 diabetes. Church et al. *JAMA*. (2010)	Bhavani Iyer