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A collaboration between University of Missouri School of Medicine and Unifesp, Escola Paulista de Medicina, Departamento de Medicina Preventiva, and Escola Paulista de Enfermagem

1. Overview

This course is designed to help students develop their abilities to identify gaps in knowledge and the need to match them with the appropriate epidemiological tools. Focus will be in the design and interpretation of populational longitudinal studies for evaluation of intervention effectiveness, collecting either observation or intervention data, from a wide range of less-than-ideal settings.

2. Course structure

Six half-day intensive training consisting of formal didactic lectures both in-person and at distance that are particularly relevant for the design and interpretation of epidemiologic studies to evaluate intervention effectiveness. Course material provided: PDF of the lectures and suggested reading.

LOCATION: UNIFESP - Campus São Paulo
Escola Paulista de Enfermagem
Anf. Mariana Fernandes



The course will be offered in English without simultaneous translation.

First week:

10/09 (Tuesday) – (9-12hs): 4 temas
Measures of occurrence in epidemiology
Statistical foundations
Measurement errors – random & systematic
Measurement errors – causation

11/09 (Wednesday) – (9-12hs): 3 temas
Basic epidemiologic designs and measures of association
Cohort / Case-control / Cross sectional

12/09 (Thursday) – (9-12hs): 2 temas
Randomized Clinical Trials
Cluster Randomized Trials

Second week:

17/09 (Tuesday) – (9-12hs): 4 temas
Trials for evaluating effectiveness
Natural Experiments
Stepped Wedge
Regression discontinuity, Difference in difference

19/09 (Thursday) – (9-12hs): 2 temas
Systematic Reviews
Meta-analyses

20/09 (Friday) – (9-12hs): 2 temas
Implementation Science
Evaluation examples

Register using the link: <https://siex.siiu.unifesp.br>



Readings by Topics:

a. Observation studies for raising (X-sectional) and testing hypothesis (Case-Control)

Serdula MK, Byers T, Mokdad AH, Simoes E, Mendlein JM, Coates RJ. The association between fruit and vegetable intake and chronic disease risk factors. *Epidemiology*. 1996 Mar;7(2):161-5. doi: [10.1097/00001648-199603000-00010](https://doi.org/10.1097/00001648-199603000-00010). PMID: 8834556.

Kahn HS, Simoes EJ, Koponen M, Hanzlick R. The abdominal diameter index and sudden coronary death in men. *Am J Cardiol*. 1996 Oct 15;78(8):961-4. doi: [10.1016/s0002-9149\(96\)00479-1](https://doi.org/10.1016/s0002-9149(96)00479-1). PMID: 8888678.

Simoes EJ, Hallal P, Pratt M, Ramos L, Munk M, Damascena W, Perez DP, Hoehner CM, Gilbertz D, Malta DC, Brownson RC. Effects of a community-based, professionally supervised intervention on physical activity levels among residents of Recife, Brazil. *Am J Public Health*. 2009 Jan;99(1):68-75. doi: [10.2105/AJPH.2008.141978](https://doi.org/10.2105/AJPH.2008.141978). Epub 2008 Nov 13. PMID: 19008499; PMCID: PMC2636600.

Malone JL, Ijaz K, Lambert L, Rosencrans L, Phillips L, Tomlinson V, Arbise M, Moolenaar RL, Dworkin MS, Simoes EJ. Investigation of healthcare-associated transmission of Mycobacterium tuberculosis among patients with malignancies at three hospitals and at a residential facility. *Cancer*. 2004 Dec 15;101(12):2713-21. doi: [10.1002/cncr.20698](https://doi.org/10.1002/cncr.20698). PMID: 15547933.

b. Cohort studies for calculating relative risks and developing health indexes.

Ramos LR, Simoes EJ, Albert MS. Dependence in activities of daily living and cognitive impairment strongly predicted mortality in older urban residents in Brazil: a 2-year follow-up. *J Am Geriatr Soc*. 2001 Sep;49(9):1168-75. doi: [10.1046/j.1532-5415.2001.49233.x](https://doi.org/10.1046/j.1532-5415.2001.49233.x). PMID: 11559375.

Ribeiro MCM, Sañudo A, Simões EJ, Ramos LR. Relationship between physical activity and functional capacity change in aged cohort in São Paulo, Brazil. *Rev Bras Enferm*. 2022;75(3):e20200837. <https://doi.org/10.1590/0034-7167-2020-0837>

Prince MJ, Acosta D, Guerra M, Huang Y, Jacob KS, et al. (2021) Intrinsic capacity and its associations with incident dependence and mortality in 10/66 Dementia Research Group studies in Latin America, India, and China: A population-based cohort study. *PLOS Medicine* 18(9): e1003097. <https://doi.org/10.1371/journal.pmed.1003097>

c. Intervention studies for effectiveness evaluation

Hariton E, Locascio JJ. Randomised controlled trials - the gold standard for effectiveness research: Study design: randomised controlled trials. *BJOG*. 2018 Dec;125(13):1716. doi: [10.1111/1471-0528.15199](https://doi.org/10.1111/1471-0528.15199). Epub 2018 Jun 19. PMID: 29916205; PMCID: PMC6235704.

de Vocht, F., Katikireddi, S.V., McQuire, C. et al. Conceptualising natural and quasi experiments in public health. *BMC Med Res Methodol* 21, 32 (2021). <https://doi.org/10.1186/s12874-021-01224-x>

Crane, M., Bohn-Goldbaum, E., Grunseit, A. et al. Using natural experiments to improve public health evidence: a review of context and utility for obesity prevention. *Health Res Policy Sys* 18, 48 (2020). <https://doi.org/10.1186/s12961-020-00564-2>

Okoro CA, Dhingra SS, Coates RJ, Zack M, Simoes EJ. Effects of Massachusetts health reform on the use of clinical preventive services. *J Gen Intern Med*. 2014 Sep;29(9):1287-95. doi: [10.1007/s11606-014-2865-2](https://doi.org/10.1007/s11606-014-2865-2). Epub 2014 May 1. PMID: 24789625; PMCID: PMC4139529.

Novais FV, Simoes EJ, Schmaltz C, Ramos LR. Randomized Controlled Trial of Primary Health Care Strategies for the Promotion of Leisure-Time Physical Activity Among Older Brazilians. *J Phys Act Health*. 2019 Sep 1;16(9):706-714. doi: [10.1123/jpah.2017-0502](https://doi.org/10.1123/jpah.2017-0502). Epub 2019 Jul 17. Erratum in: *J Phys Act Health*. 2020 Dec 1;17(12):1285. doi: [10.1123/jpah.2020-0646](https://doi.org/10.1123/jpah.2020-0646). PMID: 31310991.

Simões EJ, Hallal PC, Siqueira FV, Schmaltz C, Menor D, Malta DC, Duarte H, Hino AA, Mielke GI, Pratt M, Reis RS. Effectiveness of a scaled up physical activity intervention in Brazil: A natural experiment. *Prev Med*. 2017 Oct;103S:S66-S72. doi: [10.1016/j.ypmed.2016.09.032](https://doi.org/10.1016/j.ypmed.2016.09.032). Epub 2016 Sep 28. PMID: 27687538.

d. The role of Systematic Reviews and Meta-analysis

Moher D, Cook DJ, Eastwood S, Olkin I, Rennie D, Stroup DF. Improving the quality of reports of meta-analyses of randomised controlled trials: the QUOROM statement. *Quality of Reporting of Meta-analyses*. *Lancet*. 1999 Nov 27;354(9193):1896-900. doi: [10.1016/s0140-6736\(99\)04149-5](https://doi.org/10.1016/s0140-6736(99)04149-5). PMID: 10584742.

Stroup DF, Berlin JA, Morton SC, Olkin I, Williamson GD, Rennie D, Moher D, Becker BJ, Sipe TA, Thacker SB. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. *JAMA*. 2000 Apr 19;283(15):2008-12. doi: [10.1001/jama.283.15.2008](https://doi.org/10.1001/jama.283.15.2008). PMID: 10789670.

Neves FJ, Tomita LY, Liu ASLW, Andreoni S, Ramos LR. Educational interventions on nutrition among older adults: A systematic review and meta-analysis of randomized clinical trials. *Maturitas*. 2020 Jun;136:13-21. doi: [10.1016/j.maturitas.2020.03.003](https://doi.org/10.1016/j.maturitas.2020.03.003). Epub 2020 Mar 19. PMID: 32386661.

Yoshida Y, Boren SA, Soares J, Popescu M, Nielson SD, Simoes EJ. Effect of Health Information Technologies on Glycemic Control Among Patients with Type 2 Diabetes. *Curr Diab Rep*. 2018 Oct 18;18(12):130. doi: [10.1007/s11892-018-1105-2](https://doi.org/10.1007/s11892-018-1105-2). PMID: 30338403; PMCID: PMC6209028.