From: Hudes, Estie
Subject: CAPS Methods Core and TAPS & CTCRE Fellows presentations: "Handling Missing Data" Parts 1 & 2, Dec. 3 & 10
Date: Thursday, November 21, 2013 11:27:51 PM

Dear Methods Core seminar participants & TAPS & CTCRE fellows,

Back by popular demand! Our December presentation will be covering the topic "Handling Missing Data" in two sessions sponsored jointly by the Center for AIDS Prevention Studies (CAPS) Methods Core, the Traineeship in AIDS Prevention Studies (TAPS), and the Center for Tobacco Control Research and Education (CTCRE). All interested persons are welcome to attend.

Please note, that although the topic is a repeat of presentations from last December & January, these coming seminars have several newly-worked examples as well as demonstrations of various software packages (Stata, Mplus, AMOS). Additionally, they will go into some more detail since we have two hours rather than our usual 1.5 hour time slots. New additions include:

Part 1:

- A demonstration of how full-information maximum likelihood (FIML) works with continuous variables, using the AMOS structural equation modeling program
- A second applied example of FIML-based multiple linear regression drawn from tobacco research, with clustered data and featuring an auxiliary variable
- Time permitting, additional examples using the method of maximum likelihood to include all cases in analyses of non-continuous outcomes (e.g., logistic regression and Cox regression) models under the missing-at-random (MAR) assumption via Mplus called from within Stata by the user-written command -runmplus-

Part 2:

- Update on multiple imputation decision points, including how to handle interaction terms, what to do when the dependent variable is missing in a regression analysis involving imputed data, and the minimum number of recommended imputations
- Discussion of convergence issues in MI with an emphasis on multiple imputation through chained equations (MICE). A second worked example featuring customized Stata -mi impute chained- syntax to aid convergence will be discussed

Topic: "Handling Missing Data"

Presenters: Tor Neilands, PhD
Professor of Medicine
Director, Methods Core
UCSF / CAPS
&
Estie Hudes, PhD MPH
Specialist / Statistician
UCSF/CAPS

Time & Place: Tuesday, December 3, 2013, 2-4 [Part 1]
Tuesday, December 10, 2013, 2-4 [Part 2]
McKusick Conference room
50 Beale Street, 13th floor
San Francisco, CA 94105

Abstract: Missing data are ubiquitous in HIV/AIDS and tobacco prevention research. In the first session we present a general introduction to the handling of missing data using a variety of methods and several software packages, with an emphasis on Stata. Part 1 of this two-part presentation, offered on December 3 from 2-4 at the McCusick conference room at CAPS, will introduce the problem of missing data values, how to prevent them in applied research, missing data mechanisms, and ad hoc methods that have been traditionally used to address missing data values when they are unavoidable. We will then discuss a more modern approach based on maximum likelihood (ML), and demonstrate how to perform several ML-based regression analyses using Stata's -sem- command.

In Part 2 of the presentation, offered on December 10 from 2-4 at the McCusick conference room at CAPS, we will address how to deal with missing data situations that cannot (yet) easily be handled via ML in most commonly-used software programs, including Stata. Methods discussed include the EM algorithm and, primarily, multiple imputation (MI) based on the concepts developed in Rubin (1987), Schafer (1997) and van Buuren et. al. [1997].

Please note: if you'd like to get a head start on methods for handling missing data, please read ahead of time the following 3 articles and book chapter. The articles can be downloaded from the links via UCSF My Access or similar connection. The book chapter can be obtained by anyone.

For Part 1:

Graham, J. W. 2009. Missing data analysis: making it work in the real world. Annual

Reviews Psychology 60:549-576. http://www.annualreviews.org/toc/psych/60/1

Buhi ER, Goodson P, Neilands TB, 2008. Out of Sight, Not Out of Mind: Strategies for Handling Missing Data. Am J Health Behav. 2008;32(1):83-92
https://vpn.ucsf.edu/content/png/ajhb/2008/00000032/00000001/,DanaInfo=www.ingentaconnect.com+art00008

For Part 2:

White IR, Royston P, Wood AM, 2011. Multiple imputation using chained equations: Issues and guidance for practice. Statist. Med. 2011**,** 30 377–399
https://vpn.ucsf.edu/doi/10.1002/sim.4067/,DanaInfo=onlinelibrary.wiley.com+abstract

Acock A. What to do About Missing Values. [Book Chapter]
http://psycnet.apa.org/books/13621/002 [citation information]
http://people.oregonstate.edu/~acock/growth/2010%20Mplus%20Workshop/Stata_Presentation/acacock.doc [document]

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For building entrance at 50 Beale St., please RSVP to *Estie Hudes* ahead of time.

Materials from past Methods Core seminars can be found at
http://caps.ucsf.edu/about/structure-cores/methods-core/methods-core-seminars/

Directions to CAPS:
http://caps.ucsf.edu/about/directions-parking/

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hope to see many of you at these two presentations,
--Estie

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