Evaluating Causes of High Blood Pressure in Nurses

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## Question

## Introduction

A study by Goldstein and Shapiro (2000) collected information from 203 registered nurses in the Los Angeles area between 24 and 50 years of age on blood pressure and potential factors that contribute to hypertension. Using the information collected by Goldstein and Shapiro we are investigating what factors are significantly associated with higher systolic blood pressure. Below we describe what specific factors we are examing.

## Methods

Data from this study provided by Weiss (2005) includes about 50 observations per nurse taken repeatedly on the nurses over the course of a single day. Blood pressure was measured a half hour before the nurse’s shift began, and was taken at apporximately 20 minute intervals throughout the rest of the day. At each blood pressure reading, the nurses also rated their mood on several dimensions and the activity of each subject during the 10 minutes before each reading was measured using an actigraph worn on the waist.

Each of the variables is described below:

SNUM: subject ID SYS: systolic blood pressure (mmHg) (**Response Variable**) DIA: diastolic blood pressure (mmHg)  
HRT: heart rate (beats per minute) / 10 for scaling MNACT5: activity level (frequency of movements in 1-minute intervals, over a 10-minute period ) / 10 for scaling. PHASE: menstrual phase (follicular—beginning with the end of menstruation and ending with ovulation, or luteal—beginning with ovulation and ending with pregnancy or menstruation)  
DAY: workday or non-workday  
POSTURE: position during blood pressure measurement—either sitting, standing, or reclining  
STR, HAP, TIR: self-ratings by each nurse of their level of stress, happiness and tiredness at the time of each blood pressure measurement on a 5-point scale, with 5 being the strongest sensation of that feeling and 1 the weakest  
AGE: age in years / 10 for scaling purposes.  
FH123: coded as either NO (no family history of hypertension), YES (1 hypertensive parent), or YESYES (both parents hypertensive)  
time: in minutes from midnight  
timept: number of the measurement that day (approximately 50 for each subject)  
timepass: time in minutes beginning with 0 at time point 1 increasing by .1 for every measurement for scaling purposes.

## Results

## Discussion