



# Perceived Stress and Dietary and Physical Activity-Related Behaviors

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## Aim

To explore associations between measures of perceived stress, body-mass index (BMI), and diet and physical activity-related behaviors and whether this differed among men and women participating in the Worksite Study Promoting Activity and Changes in Eating (PACE).

## Introduction

- Impact of stress on dietary and physical activity-related behaviors is relevant because of their associations with hypertension, diabetes, and certain types of cancer
- Studies have shown that reported intake of snack food and fatty-foods increases with perceived stress while the consumption of fruits and vegetables decreases
- It has also been suggested that these relationships vary by gender and coping style

## Measures

- Perceived Stress Scale (PSS): acute and chronic stress measures (scale of 0-40)
- PACE baseline survey predictors:
  - # fruit and vegetable servings
  - # fast food restaurant meals
  - # soft drinks consumed
  - Frequency of free-time physical activity
  - Body-mass index (BMI)

## Data

- Worksites (N=34)
- Total Cohort: Group-randomized sample (n=2847)
- Subsample: Random subset of total cohort, additional measurements: blood sample, PSS (n=691)

## Analysis

- Tested for differences in predicted mean values of perceived stress between men and women for each predictor
  - Conducted linear mixed models
    - Fixed effects: age, gender, race, education
    - Random effects: worksite

## Results

**Table 1. Descriptive statistics of total cohort and subsample of PACE baseline data**

	Total		Subsample	
	Mean	SD	Mean	SD
Age (yrs)	42.33	11.78	44.04	11.53
% Women	51%	--	58%	--
% White	80%	--	88%	--
% <\$25k	6%	--	5%	--
% <HS	19%	--	12%	--
Autonomy	3.86	2.20	4.09	2.17
Fruit/Veg servings	2.97	1.73	3.07	1.76

- Women in the subsample reported higher:
  - fruit and vegetable servings (3.29 ± 1.69 vs. 2.76 ± 1.81)
  - responsibility for meals (90.8% ± 28.9% vs. 59.2% ± 49.2%)
  - no or rare free-time physical activity (35.4% vs. 26.9%)
  - perceived stress (13.64 ± 6.65 vs. 11.58 ± 6.11)

Fig. 1 Perceived Stress Score by Gender (N=614)

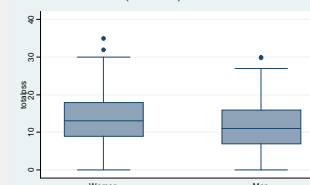
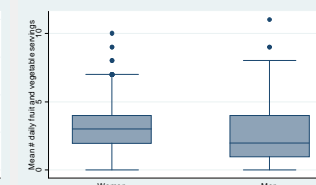


Fig. 2 Fruit and Vegetables in Subsample (N=590)



## Results cont.

**Table 2. Perceived stress score by frequency of free-time physical activity<sup>1</sup>**

	Mean	(95% CI)	P value
<b>Overall</b>	12.8	(12.2, 13.3)	
<b>Free-time Physical Activity</b>			
Never or rarely	13.45	(12.5, 14.4)	
Sometimes	12.30	(11.4, 13.2)	
Often	11.15	(10.2, 12.1)	
<b>Difference</b>	1.15	(0.22, 2.1)	0.02

<sup>1</sup> All mean values adjusted for age, gender, race, education and random worksite effects; Overall mean adjusted for random worksite effects only

## Limitations

- Cross-sectional study
- Possible difficulty generalizing to lower income or other ethnic populations

## Conclusions

- Men and women reported mean perceived stress scores consistent with values reported in the literature.
- Perceived stress appears to be positively associated with decreased physical activity, female gender, and younger age
- Perceived stress does not appear to be associated with fruit and vegetable or soda intake, BMI, or fast-food meals
- If findings can be replicated in longitudinal study, perhaps suggests need to incorporate stress management techniques within physical activity interventions to increase efficacy

