

# The Association between Worksite Social Support, Diet, Physical Activity, and Body Mass Index.

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## Background

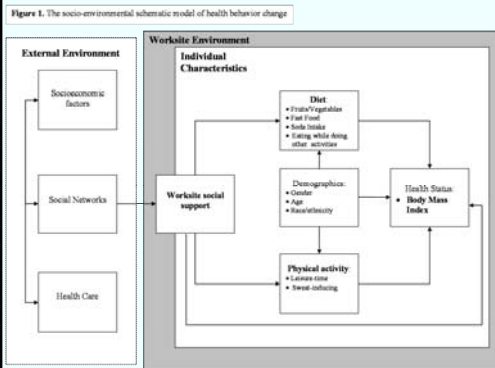
- 30% of Americans are obese (BMI ≥ 30 kg/m<sup>2</sup>).
- Only 10% of Americans eat 5 or more daily servings of fruits and vegetables.
- Most adults do not engage in the minimum recommended level of physical activity each day (i.e., 30 minutes/day).
- Worksites are important venues to influence health behaviors:
  - Over 60% of the U.S. adult population is employed.
  - Worksites may be considered communities where individuals interact.
  - Social support can be provided through co-workers.
- To evaluate the association between worksite social support, dietary and physical activity behaviors, and Body Mass Index (BMI).

## Aim

## Materials and Methods

- The Physical Activity and Changes in Eating (PACE) worksite study is a group randomized trial.
  - 34 worksites from the Seattle area were recruited and randomized.
  - Baseline surveys were collected from 2,878 employees.
  - Participating worksites have 40-350 employees, and include:
    - White collar personal services
    - Other personal services
    - Manufacturing
    - Transportation
    - Wholesale/trade
  - Baseline surveys administered to:
    - 100 employees for worksites with 40-125 employees,
    - random sample of 100 employees for worksites with 126-350 employees.
  - BMI was computed using self-reported weight (kg) and height (meters).
  - Dietary behaviors associated with high energy intake and physical activity assessed via 5 questions and 2 questions, respectively (figure 1).
- ## Analytic Methods
- 514 persons excluded due to missing values (n = 2,364) (table 1).
  - Principal components analysis applied to employee workgroup questions.
  - Variables created by averaging high loading questions on each factor.
  - Linear mixed models were executed using STATA v. 10.

## Conceptual Diagram



## Results

- Worksite social support scale created from three employee workgroup questions.
- One principal component characterized three high loading worksite social support questions (1, 3, 5 in table 2):
  - explain 45% of the total variation
  - eigen value of 2.04
  - cronbach's alpha of 0.77
- Mean BMI was 27.4 (kg/m<sup>2</sup>).
- Forty-six percent of participants engaged in daily strenuous physical activity.
- Forty-six percent of participants consumed 2 or fewer servings of fruits and vegetables per day.
- Roughly 12 percent of participants consumed 2 or more soft drinks per day.
- Higher worksite social support was associated with higher fruit and vegetable intake-summary food frequency questionnaire (figure 2) (p = 0.03).
- Higher worksite social support was associated with greater physical activity (figure 2) (p = 0.009).

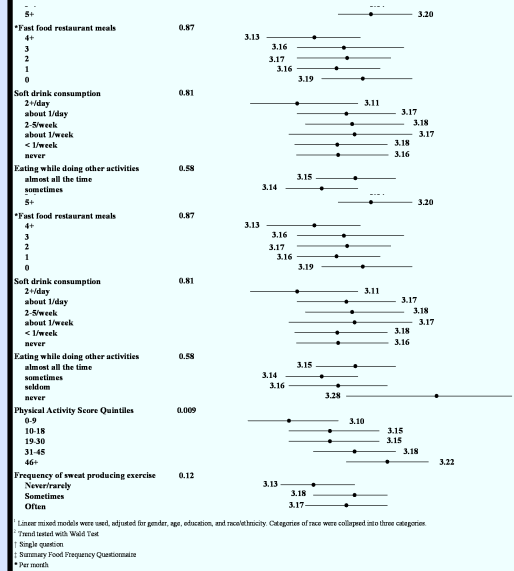
Table 1. Baseline demographic characteristics of employees at PACE worksites

Characteristics (N = 34) (n = 2,364)*	n	(%)
<b>Gender</b>		
Male	1,192	50
Female	1,172	50
<b>Age</b>	mean (s.d.)	
	42.3 (11.8)	
<b>Housemate†</b>		
Alone	382	16
With Other Adult(s) and Children	908	38
With Children Only	85	4
With Other Adult(s) Only	986	42
<b>Education</b>		
Less than high school	66	3
High school graduate or GED	975	41
Technical College	175	7
College	796	34
Postgraduate or professional degree	352	15
<b>Household Income‡</b>		
<\$25,000	111	5
\$25,000 to \$49,999	516	24
\$50,000 to \$74,999	512	24
\$75,000 to \$100,000	437	21
>\$100,000	562	26
<b>Race/Ethnicity</b>		
White	1,845	78
Black or African American	73	3
Asian	228	10
Hispanic	130	5
Other**	88	4

\*n = 2,364 is the number of individuals who responded to all questions for the regression models  
 † 3 individuals did not answer this question  
 ‡ 226 individuals did not answer this question  
 \*\* Other includes Hawaiian, Pacific Islander, Native American, and Alaskan Native

Table 2. Baseline questions related to employee workgroup at PACE worksites

n = 2,364	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
1. I look forward to being with those on my shift or in my work group.	750 (32)	1,410 (59)	187 (8)	17 (1)
2. I feel it would make a difference in my work shift or work group's performance if I wasn't there.	674 (29)	1,062 (45)	357 (15)	260 (11)
3. People take a personal interest in each other on my shift or in my work group.	659 (28)	1,412 (60)	254 (11)	39 (1)
4. There are set ways of doing things on my shift or in my work group.	380 (16)	1,424 (60)	510 (22)	44 (2)
5. Members of my shift or work group really help and support one another.	662 (28)	1,438 (61)	219 (9)	45 (2)



† Linear mixed models were used, adjusted for gender, age, education, and race/ethnicity. Categories of race were collapsed into three categories (non-Hispanic white, non-Hispanic black, and other).

## Conclusions

- Higher fruit and vegetable consumption is associated with higher worksite social support.
  - Higher physical activity scores are associated with higher worksite social support.
- ## Future Directions
- The relationship between worksite social support, dietary behaviors and physical activity should be examined in longitudinal studies.
  - Worksite intervention studies should include an emphasis on the role of social support among co-workers as a way of enhancing its impact on dietary and physical activity behaviors.

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