Diet and Physical Activity Behaviors Related to Obesity-specific Quality of Life: Baseline Results from a Worksite Trial

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Background

- Obesity is associated with a number of adverse health outcomes (i.e. heart disease and certain types of cancer); however equally important outcomes, such as well-being, productivity, and psychosocial functioning, are often overlooked.
- Obesity is associated with a diminished health-related quality of life and reduced productivity.
- Risk of impaired quality of life may be modified by targeting diet and exercise, but how obesogenic behaviors relate to obesity-specific quality of life is largely unknown.

Objective

To examine fruit and vegetable consumption, dietary behaviors, and physical activity as they relate to obesity-specific quality of life and work productivity.

Research Design/Methods

Move and Moderate in Balance (MOVE 'M) is a worksite randomized trial:

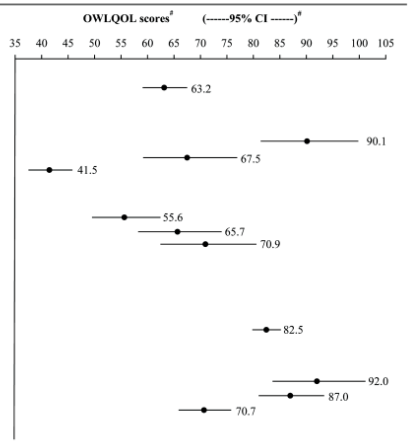
- 31 small Seattle worksites (30% non-White)
- Data collected at baseline and 2-year follow-up
- Main study outcome: Body Mass Index (BMI) from measured height and weight
- Survey measures:
  - Fruit and vegetable consumption in a Food Frequency Questionnaire format
  - Fast food and soft drink consumption
  - Eating while doing another activity (i.e. t.v. viewing)
  - Free time physical activity from modified Godin
  - Obesity and Weight Loss Quality of Life (OWLQOL)
  - Work Limitations from 8-item short form of the Work Limitations Questionnaire (WLQ)
- Analysis: Linear mixed models using baseline data on individuals, accounting for clustering at worksite level

Table 1. Baseline demographic characteristics of employees at Move'M worksites (Waves 1, 2, and 3)

	Females (*n* =281)		Males (*n* =288)	
	n	%	*n*	%
	Mean	SD	Mean	SD
BMI	29.8	8.3	30.1	6.1
Servings fruits/vegetables	2.9	1.7	2.5	1.6
Fast food meals per month	5.2	6.9	7.0	7.8
Free time physical activity score	23.6	20.5	30.2	25.3
Obesity and Weight-Loss Quality of Life total score	70.0	2.1	84.8	1.3
Work Limitations Productivity Loss Score	6.9	6.5	6.3	5.9

Table 2. Mean Obesity and Weight Loss Quality of Life (OWLQOL) scores by baseline reported dietary behaviors, physical activity, and BMI

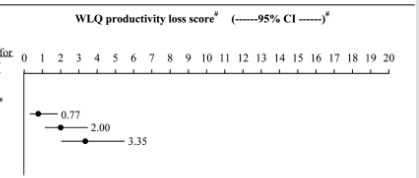
	OWLQOL scores[#] Mean[¤]	(95% CI)	exp(slope)[‡]	(95% CI)	for Trend[†]
Females					
Overall (unadjusted) (n=267)	63.2	(59.2, 67.4)			
Body Mass Index (kg/m^2) (n=229)			0.68	(0.63, 0.73)	<0.0001*
<25	90.1	(81.5, 99.7)			
25 to <30	67.5	(59.3, 76.9)			
30+	41.5	(37.6, 45.7)			
Free-time physical activity score (n=233)			1.13	(1.03, 1.23)	0.0070*
0 to 10	55.6	(49.6, 62.4)			
>10 to 30	65.7	(58.3, 73.9)			
>30	70.9	(62.5, 80.5)			
Males					
Overall (unadjusted) (n=275)	82.5	(79.9, 85.1)			
Body Mass Index (kg/m2) (n=227)			0.88	(0.83, 0.92)	<0.0001*
<25	92.0	(83.7, 101.1)			
25 to <30	87.0	(81.1, 93.3)			
30+	70.7	(66.0, 75.7)			



[#] Linear mixed model adjusted for age (continuous), race (collapsed into 4 categories), education, and income
[¤] Geometric mean
[‡] Exponential transform of slope estimate: slope coefficients were obtained from log-transformed data, but have been back-transformed for presentation here
[†] Trend tested with Wald Test
* Significant at the 0.05 level

Table 3. Mean Work Limitations Questionnaire (WLQ) Productivity Loss Score by baseline reported dietary behaviors, physical activity, and BMI

	WLQ 8-item productivity loss score[#] Mean[¤]	95%CI	exp(slope)[§]	95%CI	*P* Value for Trend[†]
Females					
Eating while doing another activity (n=243)			2.09	(1.27, 3.42)	0.0040*
Never/Seldom	0.77	(0.33, 1.81)			
Sometimes	2.00	(1.16, 3.46)			
Most of the time/Always	3.35	(2.05, 5.48)			



[#] Linear mixed model adjusted for gender, age (continuous), race (collapsed into 4 categories), education, and income
[¤] Geometric mean
[§] Exponential transform of slope estimate: slope coefficients were obtained from log-transformed data, but have been back-transformed for presentation here
[†] Trend tested with Wald Test
* Significant at the 0.05 level

Results

- Results include the first three randomization waves (24 worksites), with 571 employees (2 missing gender)
- Baseline data analyzed separately for males and females since gender modified the effects
- *BMI negatively associated with OWLQOL in both women (p<0.001) and men (p<0.001)*
- The linear effect estimate for OWLQOL score associated with one category increase in BMI:
  - 32% (95% CI: 27%, 37%) for women
  - 12% (95% CI: 8%, 17%) for men
- *Physical activity associated with OWLQOL only in women (p=0.007)*
- *Eating while doing another activity negatively associated with OWLQOL scores in men (p=0.0003) (not shown) and with productivity in women (p=0.004)*
- All other analyses not statistically significant (not shown)

Next Steps

Analyses will include:

- All recruitment waves (7 worksites)
- The influence of dietary and physical activity behaviors on the outcomes, independent of BMI.

Conclusion and Implications

- Increased physical activity and fewer obesogenic behaviors may be related to quality of life and productivity.
- If longitudinal analyses confirm findings, there may be additional work-related and general health benefits from reducing weight and increasing physical activity.

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