

Pilot Study of a YMCA-based exercise program to increase exercise enjoyment and participation among women with obesity

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Background

Women with obesity are less likely to engage in regular exercise than non-obese women; possible reasons for this disparity include:

- Obese women are less likely to enjoy exercise
- Obese women are more likely to report that they only exercise when trying to lose weight.

While women with obesity report interest in social exercise programs that foster better health, most publically available exercise programs targeted to this population focus on weight-loss. **There is a need for behavior-change programs for women with obesity that focus on exercise enjoyment rather than weight-loss, and which include opportunities for exercise in a supportive community setting.**

OBJECTIVE: Pilot test and intervention designed to increase exercise participation among women with obesity by increasing exercise enjoyment and improving outcome expectations related to exercise.

Methods

Population: Women ages 18-64 with a BMI of 30 or higher (N=49)

Study Design: Women were randomized them to receive either:

- **Comparison Condition** (n=24) a free 3-month YMCA membership (comparison group, n=24)
- **Intervention Condition** (n=25) a membership plus access to the 3-month Fit & Fab exercise program- see description on right

Data Collection: Measures were collected at baseline and 3-months. Women were compensated \$50 if they completed follow-up measurements.

- **Accelerometers:** 7 days of Actigraph GT3x wear including during sleep
- **BMI:** Calculated from measured height and weight
- **Survey:** Included the International Physical Activity Questionnaire (IPAQ), psychosocial measures related to exercise (barriers, outcome expectations, self-efficacy) and enjoyment measured using the Physical Activity Enjoyment Scale (PACES).
- **Attendance:** YMCA visits were collected using card swipe data and attendance at intervention sessions was tracked by RAs

Analysis: We used ANOCOVA to compare changes at follow-up in exercise and psychosocial variables fro intervention versus comparison participants while controlling for baseline values. Analyses excluded 2 intervention and 2 comparison participants that did not complete follow-up measures.

Fit & Fab Program

Using Social Cognitive Theory as a guide and working with an advisory committee of women from the target population and the YMCA, we developed a novel exercise program designed to increase exercise participation among women with obesity through increased enjoyment. The Fit & Fab program, based at the YMCA, included:

- **Weekly Behavioral Group Sessions** (6-10 women in each), led by supervised clinical doctoral students, covered goal setting/time management, outcome expectations, barriers, body acceptance, body messages, nutrition, overcoming setbacks, social support, self-care and planning for exercise maintenance post-study
- **Fit & Fab Exercise Classes** (2 offered per week) were open to study participants only and included an introduction to classes already offered at the YMCA, but at a slower pace, such as line dancing, aqua fitness, Zumba, cardio kick, yoga, body pump, cycling, and a cardio-strength class.
- **Weight Training Sessions** offered women a chance to develop a personal work-out plan. They were scheduled before or after weekly group sessions.

Table 1. Baseline Demographics of Study Completers

Variable	Intervention (n=23)	Comparison (n=22)
Age, mean +/- SD	48.3 ± 11.0	49.8 ± 11.0
Marital Status, n (%)		
Married	12 (52.7)	15 (68.2)
Never Married	8 (34.8)	6 (27.7)
Divorced/Separated	3 (13.0)	0 (0)
Education (years), n (%)		
High School/Some College	5 (21.7)	2 (9.1)
College Graduate	11 (47.8)	10 (45.5)
More than college	7 (30.4)	9 (40.9)
Income, n (%)		
less than \$50,000	8 (34.8)	7 (31.8)
\$50,000 or greater	12 (52.2)	14 (63.6)
Race, n (%)		
White	14 (60.9)	19 (86.4)
Black	8 (34.8)	3 (13.6)
BMI, mean +/- SD	38 ± 3.9	37.5 ± 4.2
Weight Group, n (%)		
Obese I	6 (26.1)	6 (27.3)
Obese II	9 (39.1)	9 (40.9)
Obese III	8 (34.8)	7 (31.8)
Health Status, n (%)		
Excellent	0 (0)	1 (4.3)
Very good	10 (43.5)	6 (27.3)
Pretty Good	6 (26.1)	4 (18.2)
Fair/Poor	6 (26.1)	10 (45.5)

Program Usage

YMCA Visits. On average, women in the intervention group visited the YMCA more times than women in the comparison group (p<0.0001) over 12 weeks:

- **Intervention Group** : 23.4 times (range: 9-53)
- **Control Group**: 9.7 times (range: 0-42)

Intervention Dosage: Attendance at exercise and group support sessions was high with the majority of participants attending more than the "required" one exercise class per week (Table 2).

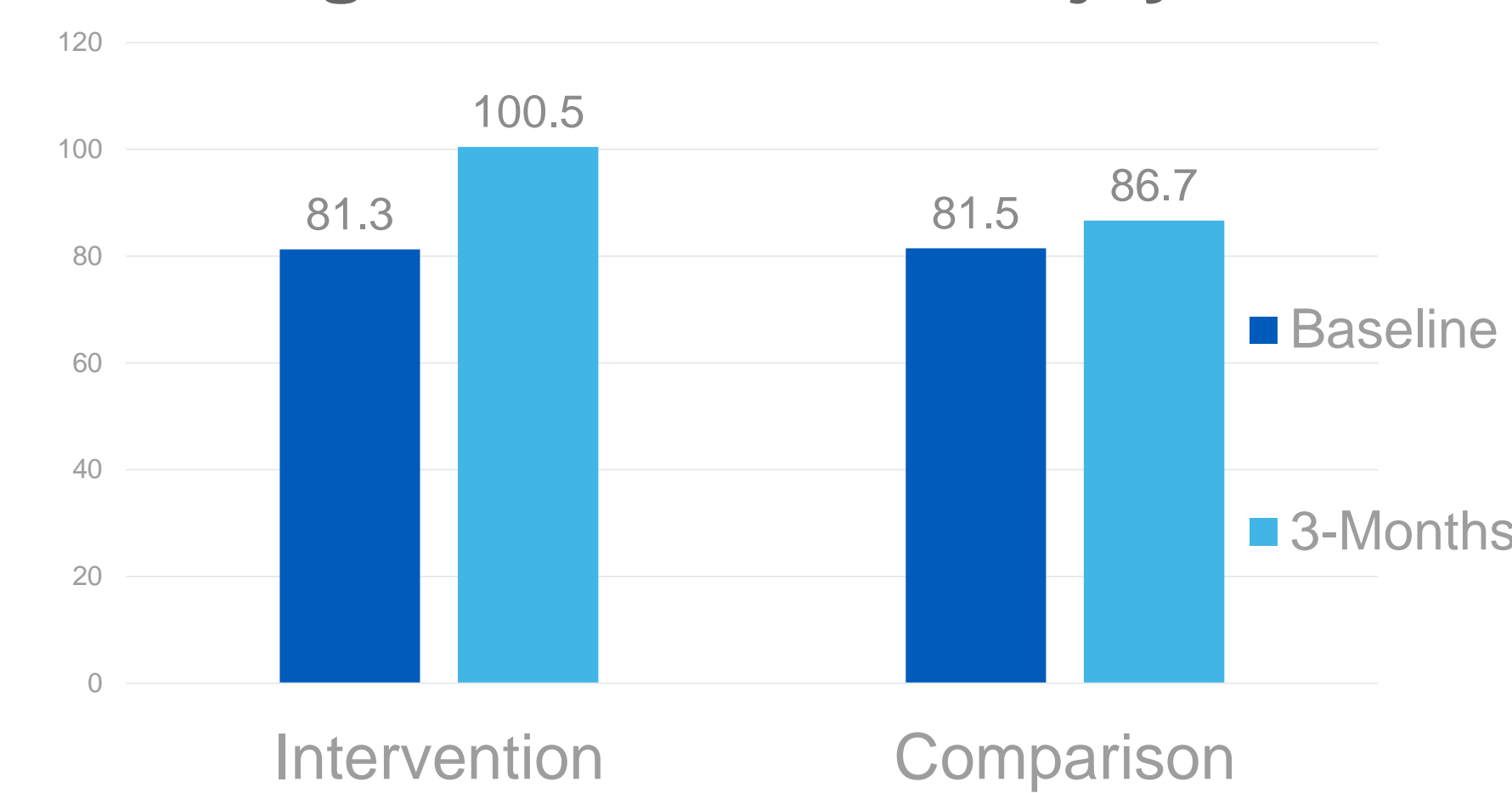
Table 2. Intervention Attendance

Group Support Session	
0-4	13% (n=3)
5-8	35% (n=8)
9-12	61% (n=14)
Fit&Fab Exercise Classes	
0-7	4% (n=1)
8-14	39% (n=9)
15+	65% (n=15)
Weight Sessions	
0-4	9% (n=2)
5-8	35% (n=8)
9-12	65% (n=15)

Behavioral Outcomes

Figure 1. shows that women in the intervention group increased their enjoyment compared to women in the comparison group (p=0.009). There were no statistically significant differences in outcome expectations, barriers, social support or self-efficacy for intervention vs. control group at follow-up.

Figure 1. Exercise Enjoyment



Exercise Outcomes

Accelerometer Data: Based on accelerometer data, we saw greater increases in the percent of time spent in moderate-to-vigorous physical activity (MVPA) and steps/day for the intervention vs. comparison group, but those changes were not statistically significant. (Table 3)

IPAQ Data: There were statistically significant increases in vigorous PA and walking for the intervention vs. the comparison group (Table 3). Notably, the intervention group reported 1,212 more MET-minutes/day of MVPA (p=0.001) than the comparison (Figure 2); that's approximately 198 more min/week (or 28 min/day) of a 6-MET exercise like Zumba.

Results

Figure 2. Self-Reported MET-Minutes Per Week of Moderate to Vigorous Physical Activity

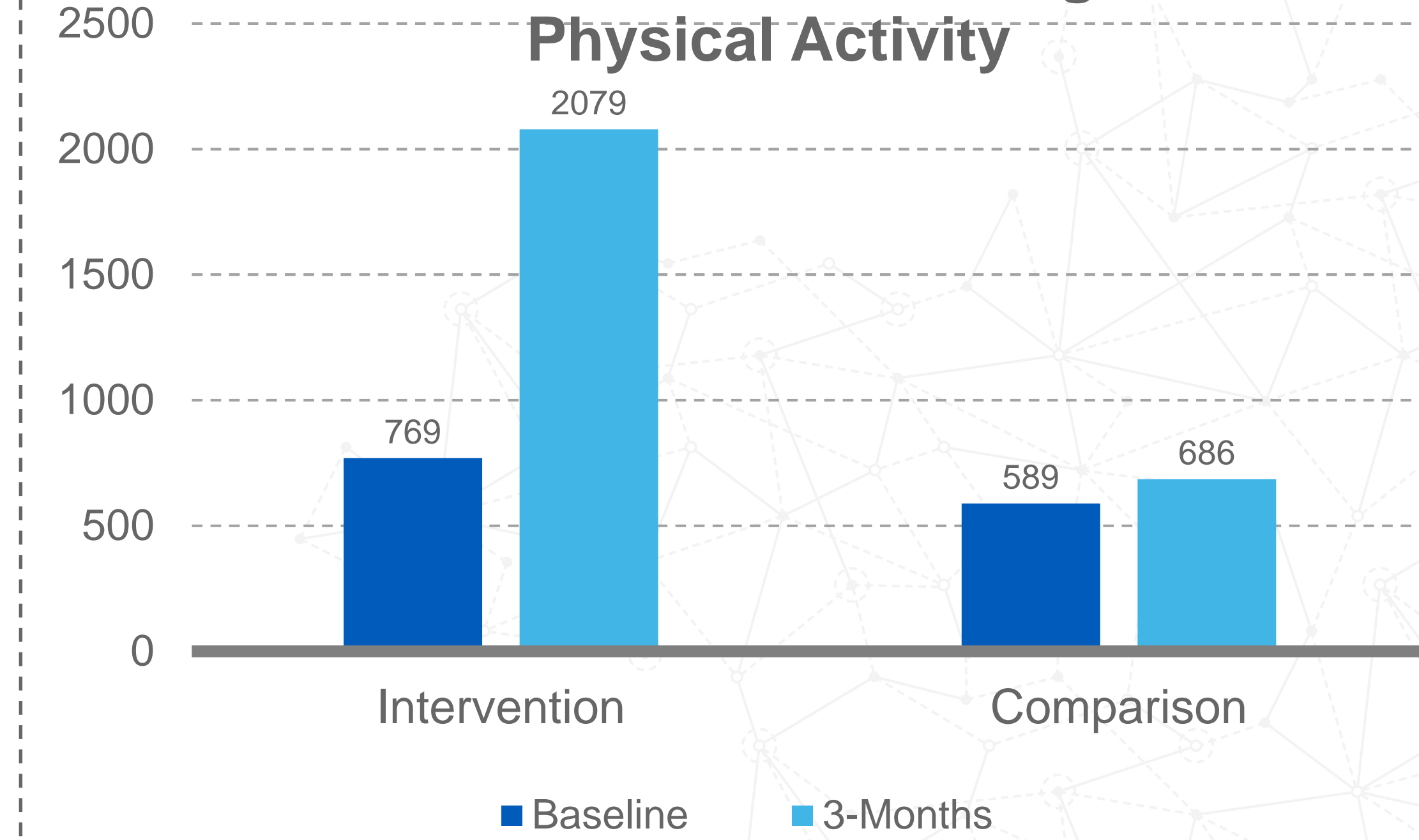


Table 3. Changes in Physical Activity Outcomes

Activity Outcomes	Intervention Mean (SD/SE)	Comparison Mean (SD/SE)	P-Value
% of Time in MVPA			
Baseline	25.2 (1.3)	23.3 (1.4)	0.319
Change	3.04 (0.76)	1.32 (0.80)	0.125
Steps/Day			
Baseline	11093.8 (622.8)	10105.0 (649.3)	0.278
Change	1502.0 (374.5)	576.623 (932.0)	0.096
Walking (min/week)			
Baseline	171.7 (33.2)	84.1 (34.0)	0.073
Change	75.3 (29.6)	-31.5 (30.3)	0.018
Moderate PA (min/week)			
Baseline	37.3 (15.4)	42.4 (15.4)	0.813
Change	75.1 (30.4)	29.9 (32.7)	0.318
Vigorous PA (min/week)			
Baseline	6.7 (6.8)	20.0 (6.8)	0.172
Change	92.5 (16.4)	15.1 (16.8)	0.002

Conclusion

An enjoyment-focused exercise intervention was able to increase exercise enjoyment and participation in a high-need population. We also saw overall increases in total physical activity for intervention participants. If we can demonstrate that the Fit & Fab program has an effect on longer term exercise participation and health outcomes, this intervention has the potential to be scaled up through YMCAs across the country.

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