



Diabetes Prevention Education in a Rural Primary Care Setting

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Background

- By 2020, 1 in 3 with diabetes
- Lifestyle interventions targeting diet and lifestyle help reduce risk of developing T2DM
- Limited programming for prevention of diabetes targeted to rural adults in primary care

1) Canadian Diabetes Association Diabetes: Canada at the Tipping Point Charting a New Path (2010)
Retrieved April 16, 2012 from [http://www.diabetes.ca/documents/get-involved/17620 DPR Highlights EN 4.pdf](http://www.diabetes.ca/documents/get-involved/17620_DPR_Highlights_EN_4.pdf)

2) Knowler WC, E Barrett-Connor, SE Fowler et al. 2002 Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 346 (6),393-403.

Introduction

- Community-based lifestyle intervention program
- Targeting rural adults
- Unique environmental challenges and social factors
- IFG or IGT
- Dietitians providing education and hands-on activities
- Increase awareness of risk factors, promote skill building, and encourage self management

Objectives

Primary Objective

- To increase participant awareness, knowledge and self-efficacy toward making positive lifestyle changes known to decrease the risk of Type 2 diabetes development.

Objectives

Secondary Objectives

- Reduce key biochemical, anthropometric and hemodynamic markers known to increase the risk of T2DM development
- Compare the baseline characteristics of those who decide to participate in the intervention program versus those who decline to participate.
- Evaluate the practicality, feasibility and acceptability of the prediabetes intervention program for adult participants.

Methods

Eligibility Criteria

- Diagnosed with Prediabetes
- Have not been seen by a Dietitian in 1 yr.
- Able to participate in low impact activities.
- Able to eat a balanced diet
- Not pregnant or lactating mothers.
- Not diagnosed with a condition (e.g. cancer) or behavioral or psychiatric conditions that are not under control.



Referral Process

RURAL ADULTS

Reducing their risk of Diabetes



- ▶ The prediabetes education program is designed to assist adults with prediabetes in making positive lifestyle changes to help them to delay or prevent the development of diabetes.
- ▶ There is more program information and education session dates on our website: www.starfht.ca

Contact the Research Dietitians:

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Program Options

Option 1 – Intervention

- 6-month program with monthly nutrition and physical activity education sessions
- Check-in one month and six months after education sessions completed.



Program Options

- Option 2 – Control
- One-time 2-hour group education session
- Mailed out questionnaires at 6 months and 1 year later

Methods

Measurable changes



Results

Baseline and midpoint knowledge questions of diabetes related risk from the lifestyle intervention group

Knowledge Questions	Baseline	Midpoint
N	26	9
Recommended number of servings of fruit and vegetables according to Canada's Food Guide Ψ	28.0	77.8
Recommended number of steps Ψ	32.0	88.9
Beverages that raise blood sugar*	68.5 \pm 24.1	63.3 \pm 28.3
Foods that are high in fat*	76.0 \pm 18.3	86.1 \pm 14.6
Level of physical activity*	40.0 \pm 27.3	64.4 \pm 34.3

Ψ Percentage of participants that provided the correct answer

* Number of correct answers displayed as a percentage mean \pm standard deviation

Results

Baseline and midpoint self-reported awareness and self-efficacy of diabetes related risk from the lifestyle intervention program

Lifestyle Beliefs*	Baseline	Midpoint
N	26	9
“How high is your risk of developing diabetes?” δ	57.8 \pm 20.4	53.3 \pm 22.4
“How likely is it that you can prevent or delay the development of diabetes?” ψ	80.0 \pm 17.6	73.3 \pm 20.0
“How confident are you that you can make healthier eating choices in the next 6 months ?” λ	82.7 \pm 20.3	83.3 \pm 14.1
“How confident are you that you can participate in regular physical activity in the next 6 months ?” λ	84.1 \pm 14.0	65.7 \pm 25.1

* Mean \pm Standard deviation for participants of the intervention program at baseline and midpoint

δ Answer reported by the participants on a scale ranging from 0 percent to 100 percent (with 0 defined as “no risk” to 100 defined as “very high risk”).

ψ Answer reported by the participants on a scale ranging from 0 percent to 100 percent (with 0 defined “not likely” to 100 defined as “very likely”).

λ Answer reported by the participants on a scale ranging from 0 percent to 100 percent (with 0 defined as “not confident” to 100 defined as “very confident”).

Results

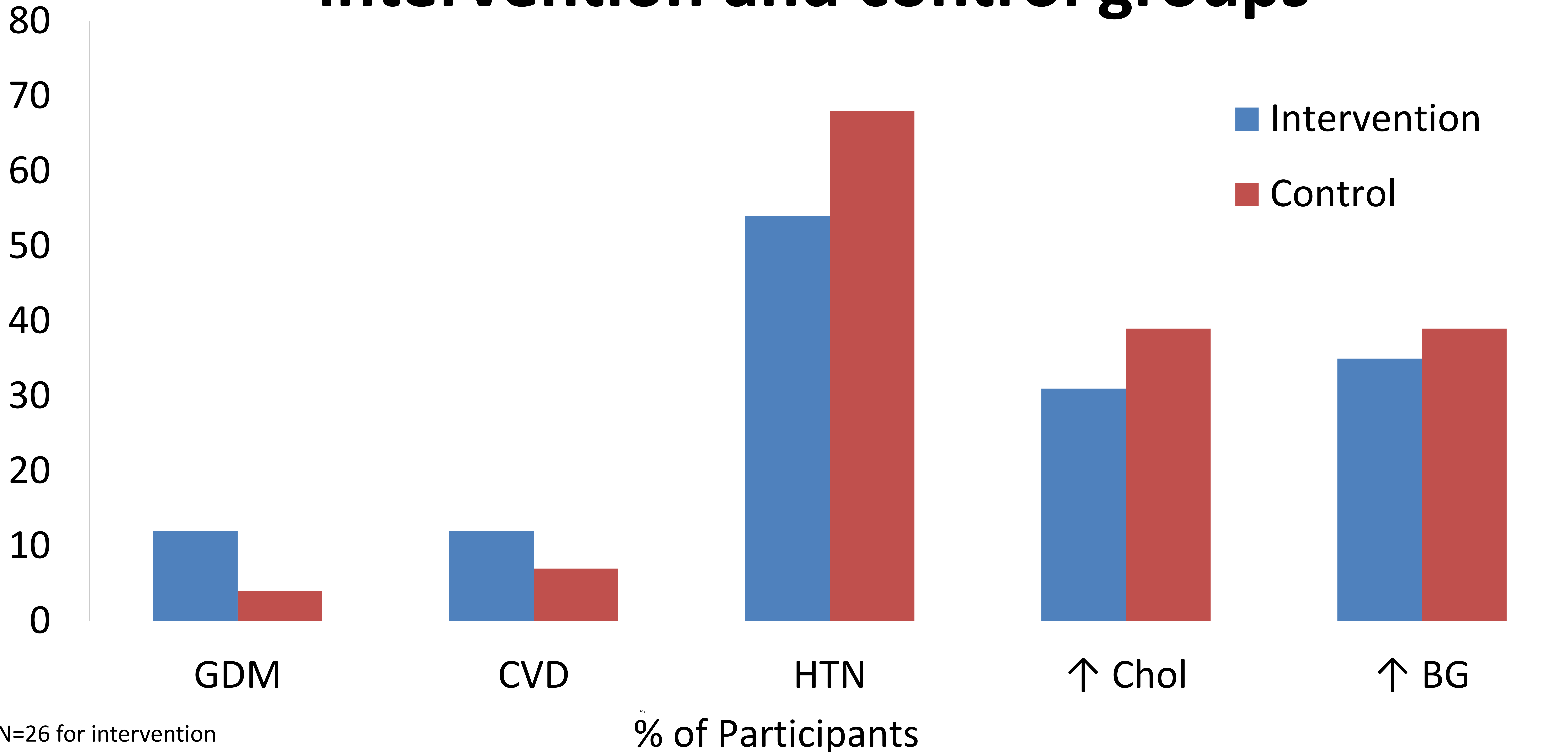
Baseline demographic and anthropometric characteristics of the participants with prediabetes from the intervention and control groups

Demographic and Anthropometric Characteristics	Intervention	Control
N	26	28
Age (years)*	59.1±7.9	66.8±8.1
Sex (% male)	50	57
BMI (kg/m ²)*λ	32.7±4.7	32.4±5.1
Ethnicity (%)	100% Caucasian	89% Caucasian, 11% other
Marital Status (% married or common law)	73	93
Highest Education Level (% > high school)	46	39
Employment (% employed)	64	43

* Mean ± standard deviation for the intervention and control groups

λ Body mass index calculated from measured height and weight at baseline

Baseline self-reported co-morbidities of the participants with prediabetes from the intervention and control groups

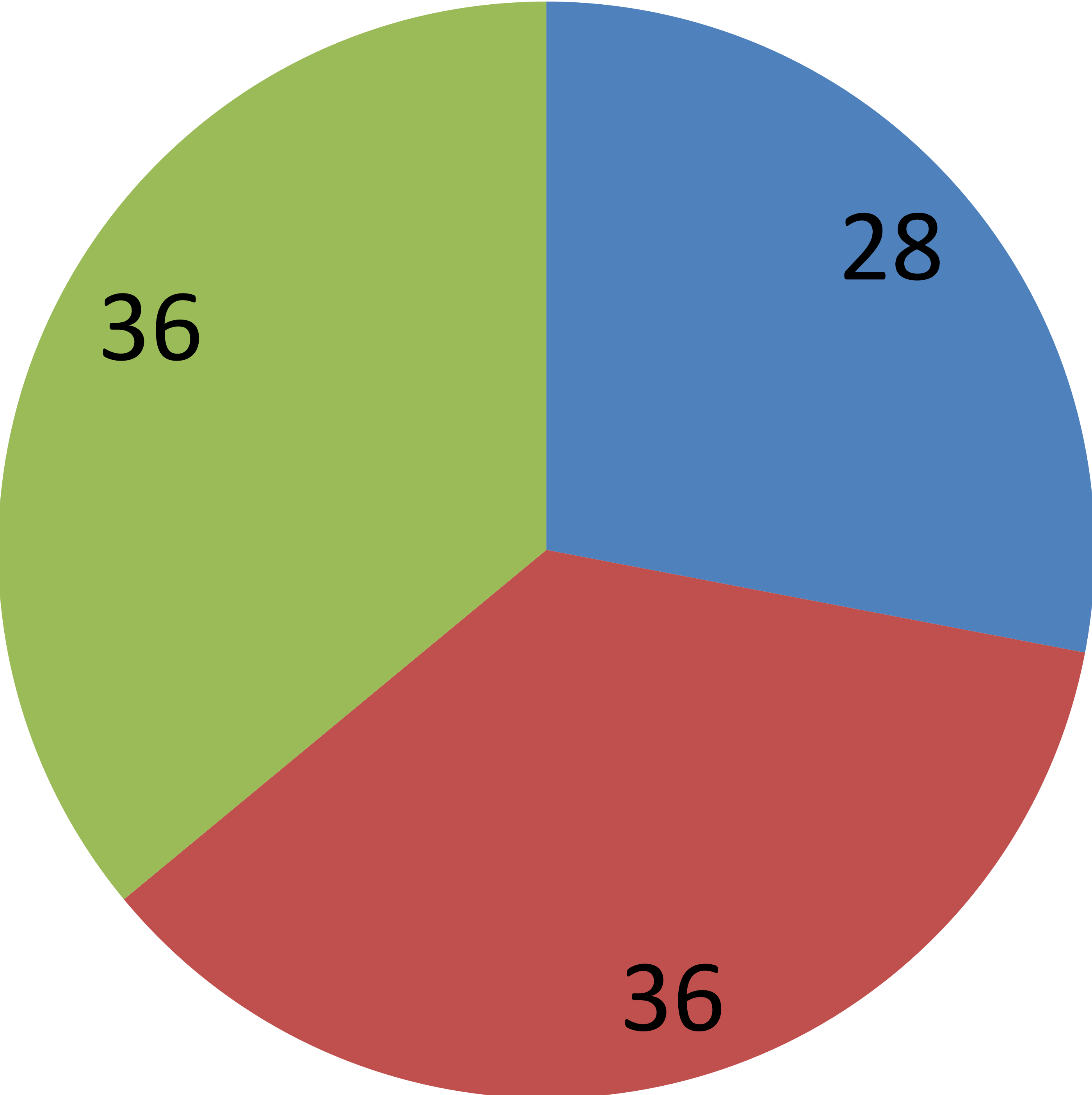


N=26 for intervention
N=28 for control

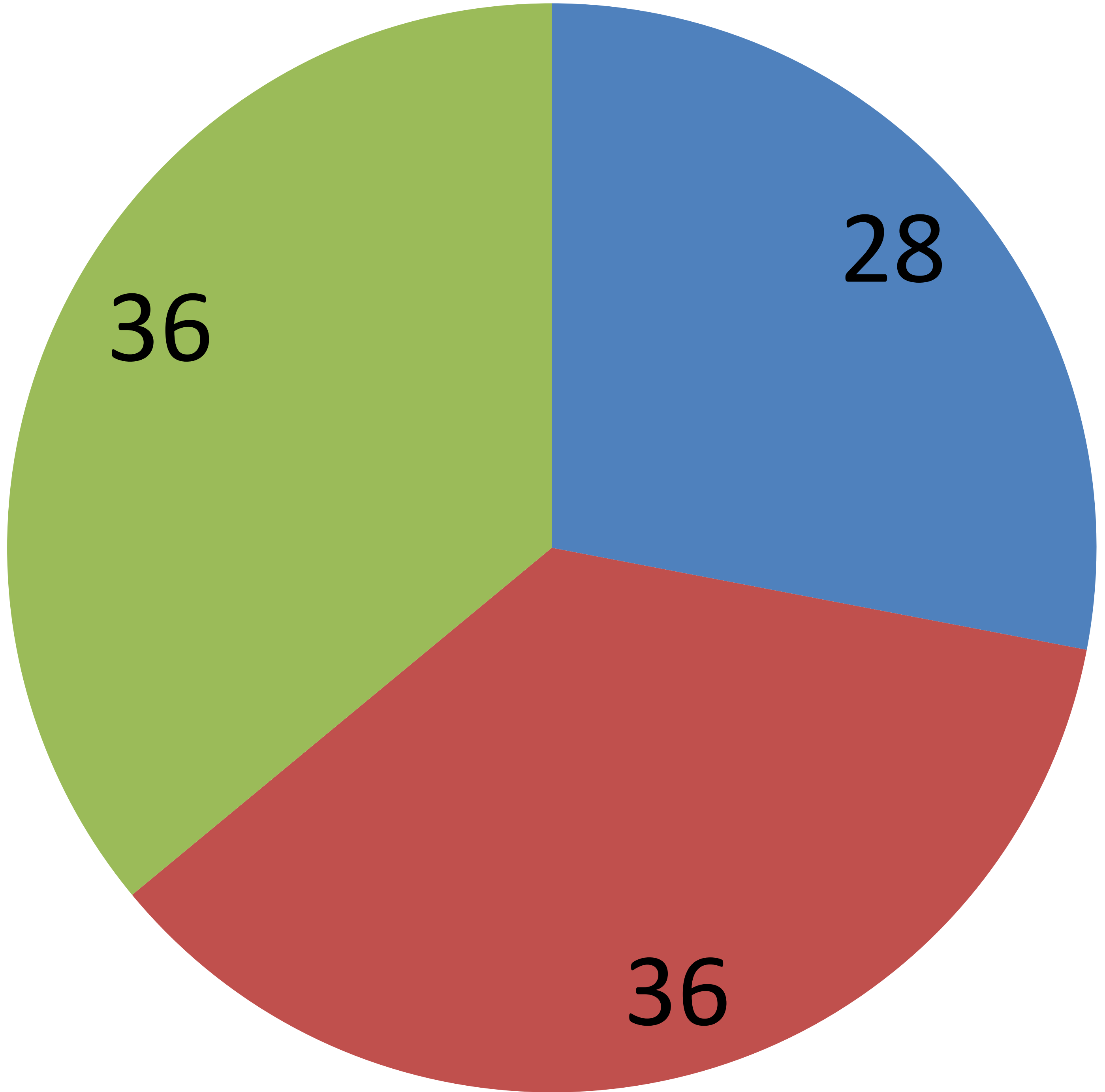
% of Participants

Level of self-reported physical activity at baseline (%)

Intervention



Control



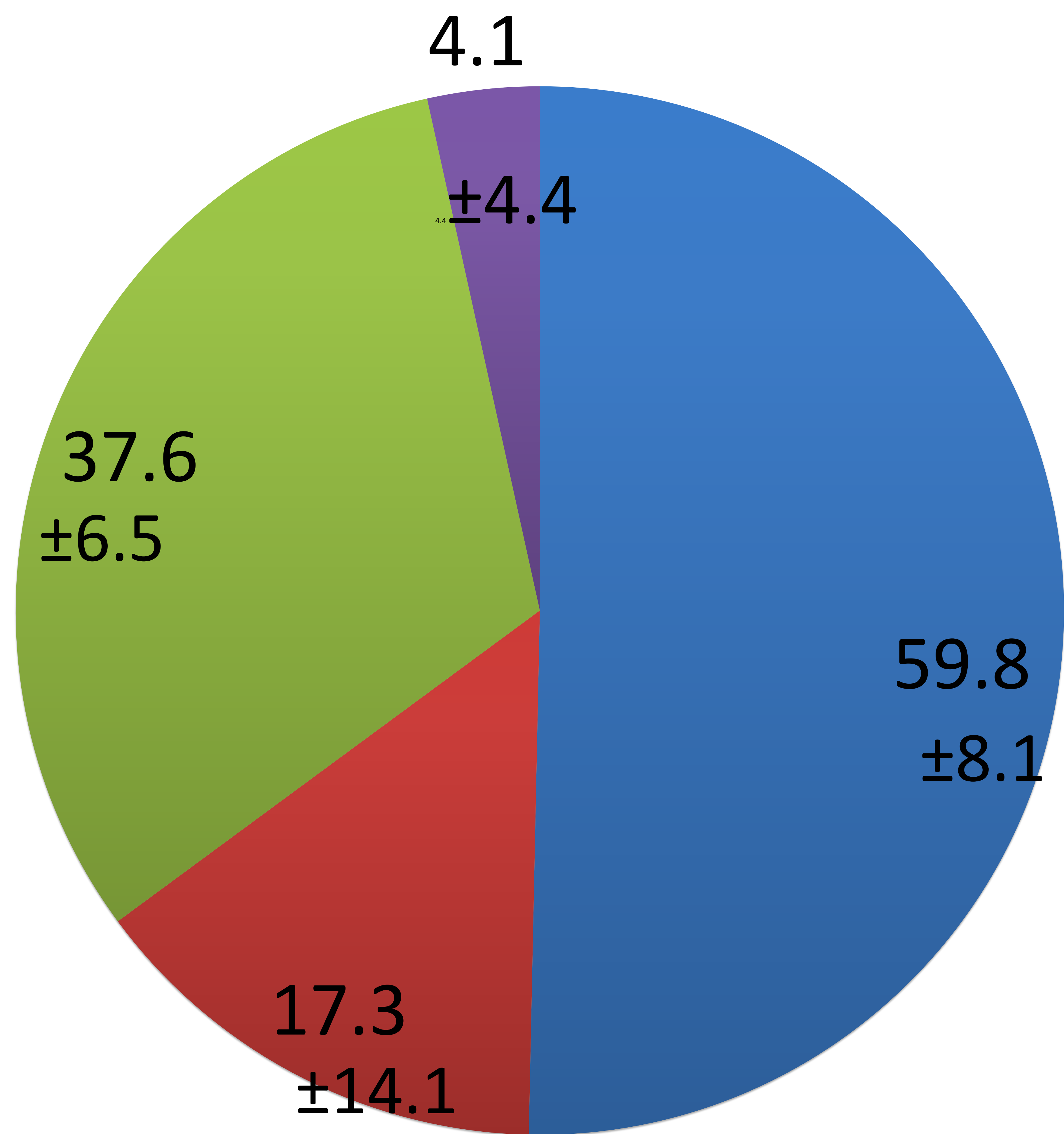
- Low
- Moderate
- High

N=25 for intervention
N=25 for control

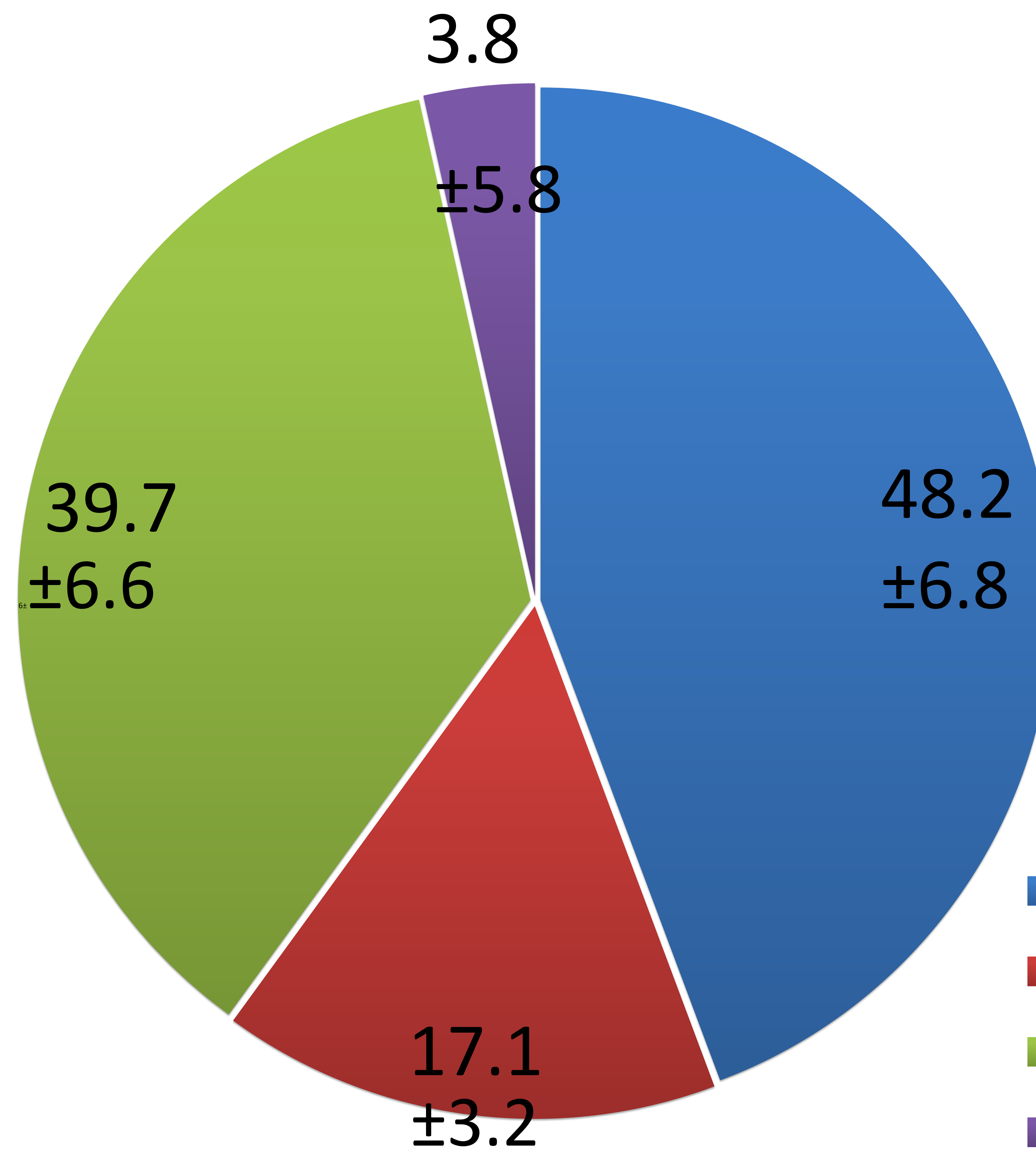
Baseline Food Habits Comparison

% Energy from Macronutrients

Intervention



Control

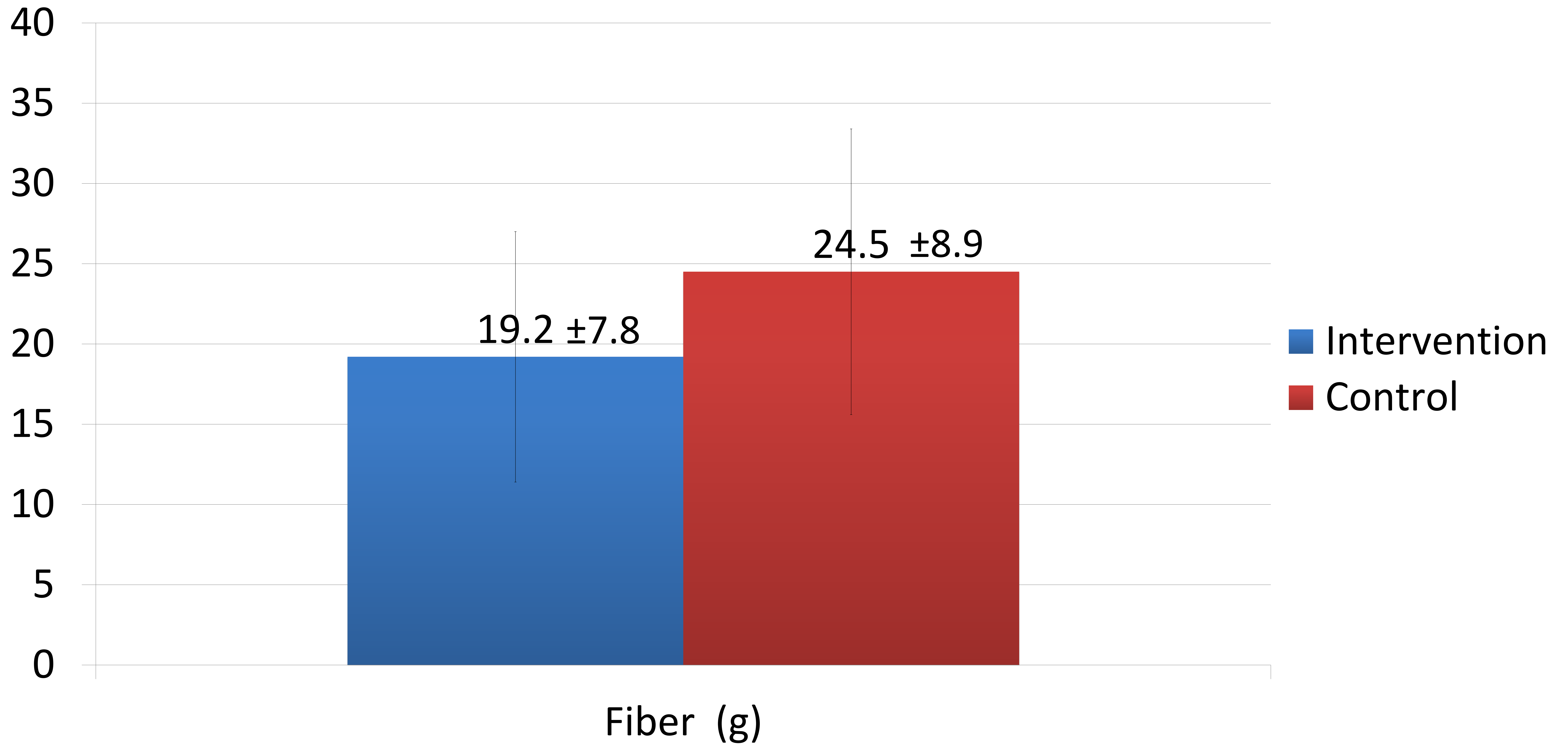


- Average % Carbohydrate
- Average % Protein
- Average % Fat
- Average % Alcohol

N=24 for intervention
N=25 for control

Baseline Food Habits Comparison

Average Daily Fiber Intake

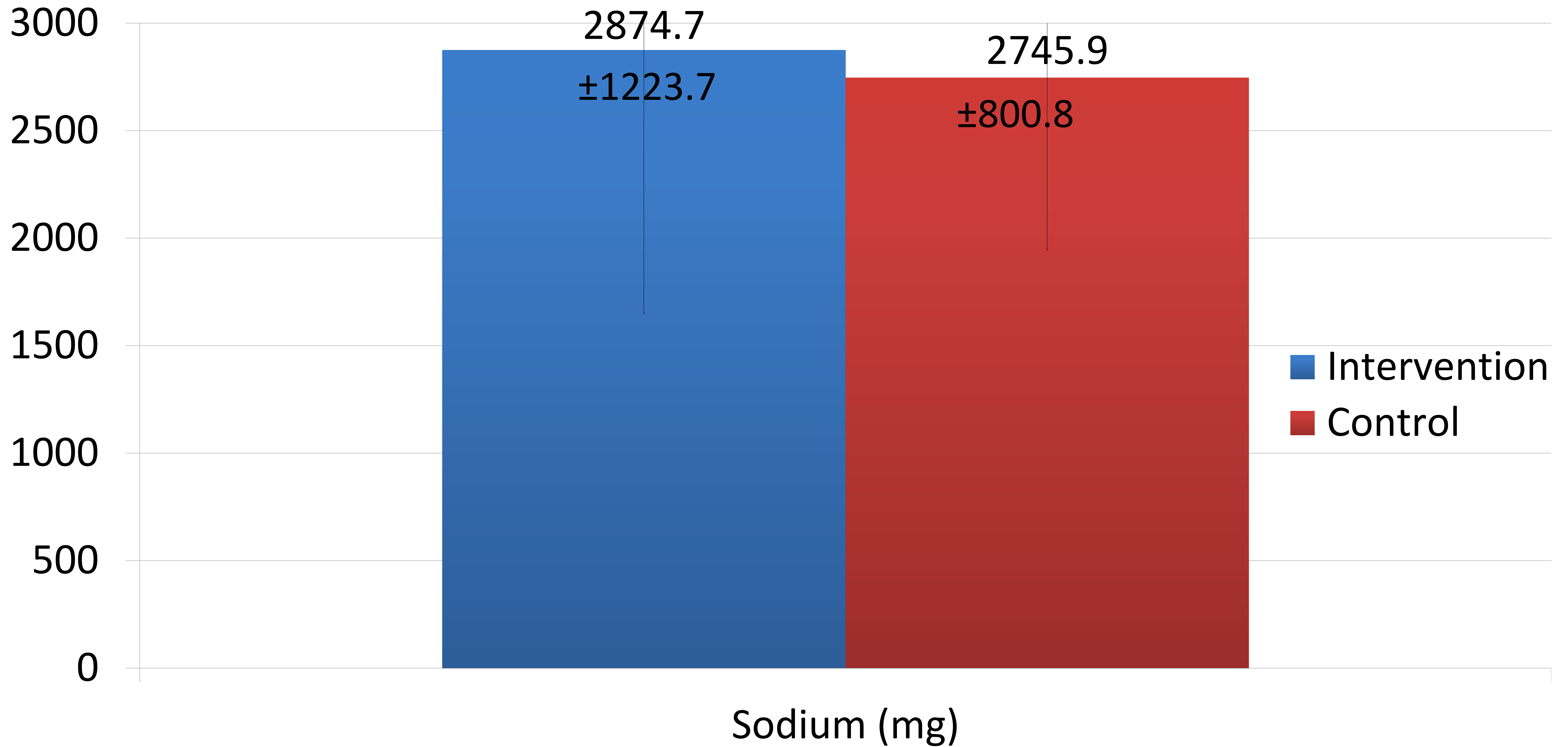


N=24 for intervention

N=25 for control

Baseline Food Habits Comparison

Average Daily Sodium Intake

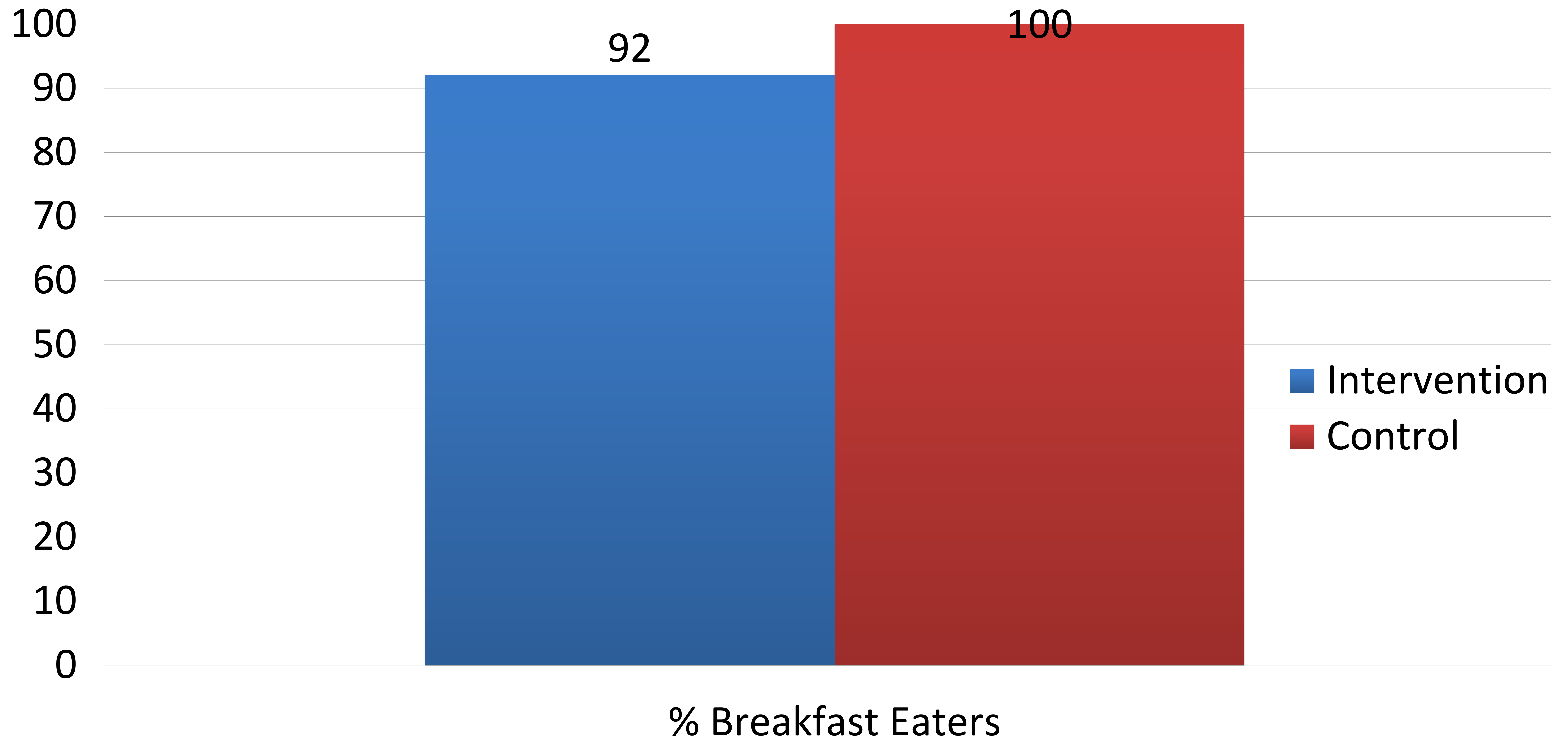


N=24 for intervention

N=25 for control

Baseline Food Habits Comparison

Breakfast Eaters



N=24 for intervention

N=25 for control

Future Directions

- Analysis of midpoint and endpoint data
- Questionnaires and focus groups for feasibility assessment



Challenges

- Time constraints/balancing workload
- Buy in from referral source
- Advertising
- Data management
- Program timelines

Benefits

- Community Building
- Peer support
- Increased access to care
- Support to help facilitate behaviour change
- Flexible meeting times
- Increased screening