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Impact of an Intensive 12-Week Wellness Coaching Program on Self-Care Behaviors among Adult Primary Care Patients with Pre-Diabetes

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Objectives

- Describe the prevalence of pre-diabetes and its risk for diabetes progression
- Describe role of wellness coaching in pre-diabetes
- Summarize impact of wellness coaching on self-care behaviors among patients with pre-diabetes

Background

- 9.3% of US adults 20 years and older have diabetes
- Another 37% have pre-diabetes
  - High risk of progression to diabetes
  - About 70% expected to develop diabetes within 10 years
  - Observed association between pre-diabetes and risk of CKD, small fiber neuropathy, macrovascular disease

Background

- Progression can be *prevented* or *delayed*
  - *5-7% weight loss achieved through positive lifestyle interventions*
- The US Diabetes Prevention Program (DPP)
  - *Interventions aimed at weight loss, dietary change and increased physical activity*
  - *Reduced incidence of diabetes by 58%*
- Challenge is to enable individuals to initiate and maintain healthy lifestyle changes

Wellness Coaching - Premise

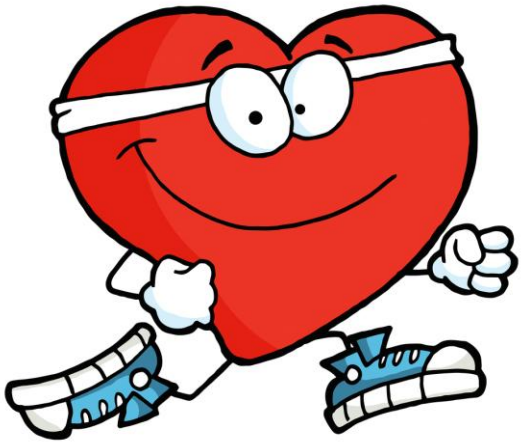
- Offers a one-on-one focused self-management support program
  - Based on “an interactive role” undertaken by a professional to move patient to be an active participant in self-management
- Health education alone not sufficient to support and sustain long term behavioral change
  - Situations where professionals can provide support, enhance motivation and guide patients towards behavior change

Wellness Coaching - Literature

- Has not been widely evaluated among patients with pre-diabetes
  - 2010 review of 15 randomized health coaching interventions
  - Mayo Clinic experience
    - impacted 3 areas of psychological functioning (QoL, mood and perceived stress)
    - Improved health behavior, goal setting skills
  - Feasible to integrate in primary care practice
  - Well received by patients and physicians in primary care setting

Primary Aim

- Assess whether an individualized 12 week wellness coaching intervention for primary care patients with pre-diabetes will improve self-care behaviors as measured by self-reported changes in physical activity level and food choices



Secondary Aims

- Does wellness coaching improve self-efficacy and quality of life?
- Identify perceived barriers to engaging in healthy behaviors by patients
- Describe the number and types of referrals resulting from the intervention

Methods

- Prospective study
- Mailed recruitment letters
  - Adult patients with pre-diabetes, who met inclusion criteria
  - Baseline questionnaires and HIPAA authorization mailed along with the recruitment letters
- Clinical Research Coordinator (CRC) contacted invited patients who did not opt out
  - Completed the screening for study exclusion
  - Verified completion of study questionnaires including PHQ-9

Inclusion and Exclusion criteria

- **Inclusion criteria**
  - 18-80 years of age at the time of study initiation
  - Pre-diabetes based on the ADA definition of FBS 100 to <126 mg/dL or HbA1c 5.7-6.4%
  - Able to participate fully in all aspects of the study
- **Exclusion criteria**
  - Active untreated clinically significant psychiatric condition or have newly diagnosed clinical depression based on PHQ-9 score =/>10
  - Institutionalized (group or nursing home, ALF, prison)

Wellness coaching process

- Four certified wellness coaches
- Initial wellness coaching session conducted face to face
  - Return visits in-person or telephone-based coaching
- 12 sessions completed within 16 weeks
  - Complete 6 of 12 wellness coaching sessions

Instruments

- Questionnaires
  - Demographics
  - PHQ-9 depression screening tool
  - Outcome measures
    - Baseline, week 0
    - 6 weeks
    - 12 weeks (end of coaching)
    - 24 weeks

- A satisfaction survey administered at the end of wellness coaching.
- Questionnaires and satisfaction survey mailed out to the subjects

Outcome Measures - questionnaires

- The Stanford Patient Education Research Center 6 item exercise behavior questionnaire
- 5 item questionnaire
  - Adapted from Happy Heart Study at Mayo Clinic
- A validated 5-item self-efficacy scale with 5-point scales developed at UW-Madison
- Mayo Clinic developed Quality of Life assessment tool

Exercise Behavior Questionnaire

Exercise Behaviors

During the past week, even if it was not a typical week for you, how much **total** time *(for the **entire week**)* did you spend on each of the following? *(Please circle **one** number for each question.)*

	none	less than 30 min/wk	30-60 min/wk	1-3 hrs per week	more than 3 hrs/wk
1. Stretching or strengthening exercises (range of motion, using weights, etc.)	0	1	2	3	4
2. Walk for exercise	0	1	2	3	4
3. Swimming or aquatic exercise	0	1	2	3	4
4. Bicycling (including stationary exercise bikes)	0	1	2	3	4
5. Other aerobic exercise equipment (Stairmaster, rowing, skiing machine, etc.)	0	1	2	3	4
6. Other aerobic exercise *Specify*_____	0	1	2	3	4

Scoring

Code each item as the number circled, then covert as follows. If two consecutive numbers are circled, code the lower number (less exercise). If two non-consecutive numbers are circled, do not score the item. For "Other aerobic", try to fit the type of exercise into the existing aerobic categories (i.e., treadmill as "other aerobic equipment"), otherwise leave as "other aerobic" (i.e., "dancing"). However, if exercise that is **not** aerobic, such as yoga or weight training, do not score as aerobic. Yoga, weight training, tai chi, etc., should be scored as "stretching or strengthening".

Each category is converted to the number of minutes below. Time spent in stretching or strengthening is the value for item 1. Time spent in aerobic exercise is the sum of the values for items 2 through 6.

None	Less than 30 minutes/week	30-60 minutes/week	1-3 hours/week	More that 3 hours/week
0	15	45	120	180

Health Behaviors Questionnaire

CURRENT HEALTH BEHAVIORS

7. Would you say your general health is?

☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

8. How confident do you feel in your ability to regularly make healthy eating choices?

Not at all Confident				**Somewhat Confident**				**Very Confident**
1	2	3	4	5	6	7	8	9

9. How confident do you feel in your ability to exercise regularly?

Not at all Confident				**Somewhat Confident**				**Very Confident**
1	2	3	4	5	6	7	8	9

10. Over the past week, how successful have you been in making healthy eating choices for your meals and snacks? *(**Circle** the number that best describes you **over the past week**)*

Not at all successful (*did not make healthy eating choices about half the time*)			**Somewhat successful** (*made healthy eating choices about half the time*)				**Very successful** (*made healthy eating choices every meal*)	
1	2	3	4	5	6	7	8	9

11. During a typical **7-Day period** (a week), in your leisure time, how often do you engage in any regular activity **long enough to work up a sweat** (heart beats rapidly)? *(**Circle** one number below)*

Often	Sometimes	Never/rarely
1	2	3

Self-Efficacy Questionnaire

SELF EFFICACY

12. I am confident I can have a positive effect on my health.

Disagree very much				Agree very much
0	1	2	3	4

13. I have set some definite goals to improve my health.

Disagree very much				Agree very much
0	1	2	3	4

14. I have been able to meet the goals I set for myself to improve my health.

Disagree very much				Agree very much
0	1	2	3	4

15. I am actively working to improve my health.

Disagree very much				Agree very much
0	1	2	3	4

16. I feel that I am in control of how and what I learn about my health.

Disagree very much				Agree very much
0	1	2	3	4

Quality of Life Questionnaire

QUALITY OF LIFE SELF ASSESSMENT

Please circle the one number (0-10) best reflecting your response to the following that describes your feelings **during the past week, including today**.

17. How would you describe your overall Quality of Life?

As bad as it can be										As good as it can be
0	1	2	3	4	5	6	7	8	9	10

18. How would you describe your overall mental (intellectual) well-being?

As bad as it can be										As good as it can be
0	1	2	3	4	5	6	7	8	9	10

19. How would you describe your overall physical well-being?

As bad as it can be										As good as it can be
0	1	2	3	4	5	6	7	8	9	10

20. How would you describe your overall emotional well-being?

As bad as it can be										As good as it can be
0	1	2	3	4	5	6	7	8	9	10

21. How would you describe your level of social activity?

As bad as it can be										As good as it can be
0	1	2	3	4	5	6	7	8	9	10

22. How would you describe your overall spiritual well-being?

As bad as it can be										As good as it can be
0	1	2	3	4	5	6	7	8	9	10

Results

- 560 mailed out recruitment letters in sequences
  - 2nd mailing after 6 weeks
- 168 consented to participate
- 99 (18%) enrolled & completed at least one session

Participants vs. non-participants

Characteristic	Participants* N=99	Non-participants** N=456	p
Age (years)			0.37
<=40	6 (6.1%)	26 (5.7%)	
41-60	24 (24.2%)	143 (31.4%)	
>60	69 (69.7%)	287 (62.9%)	
Female	53 (53.5%)	202 (44.3%)	0.09
Most recent HbA1C (mean, SD)	6.2 (0.08)	6.2 (0.11)	0.33
Most recent glucose (mean, SD)	107.9 (5.3)	108.5 (6.1)	0.66

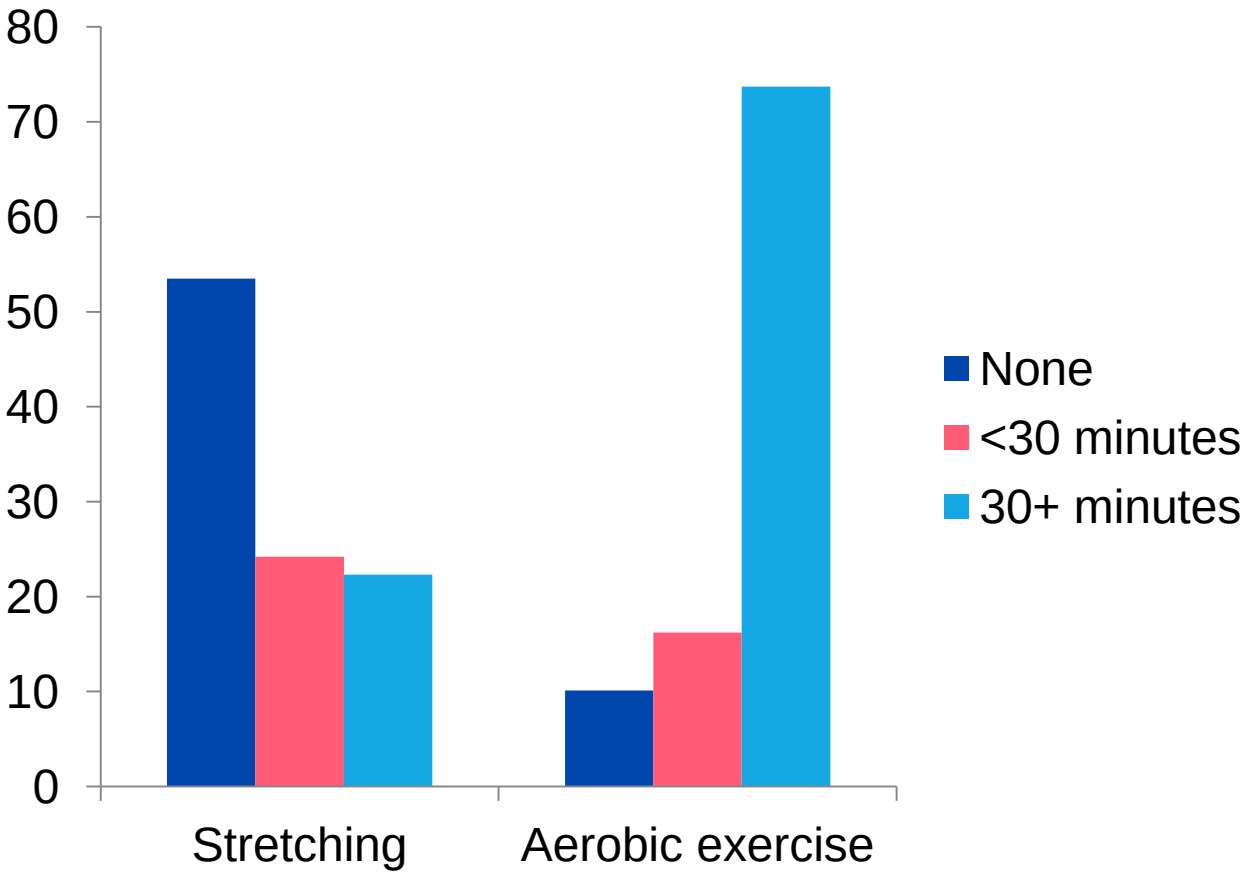
*With at least one visit

**Excluding those with known depression

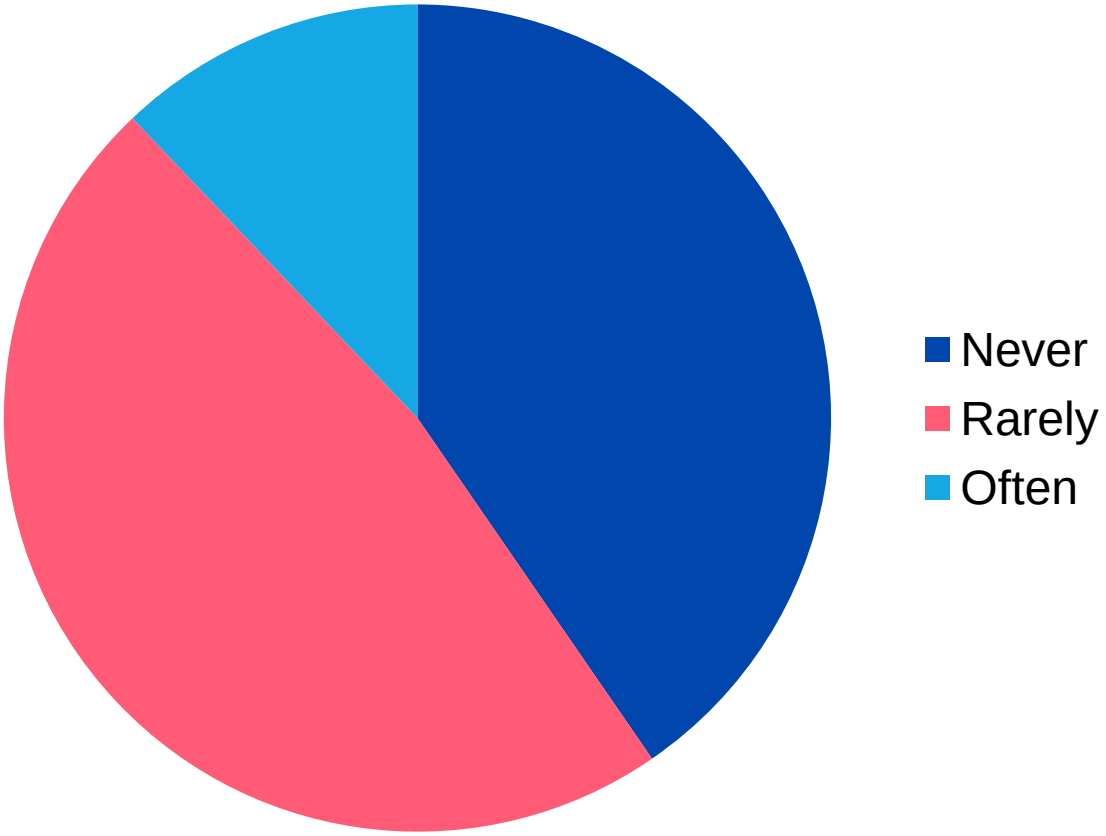
Baseline demographics of participants

Characteristic	N, %
Mean Age (SD)	64 (11.3)
BMI	
Overweight	**32, 35.6%**
Obese	**38, 42.2%**
Married/ Living Together	74, 75.5%
White Race/Ethnicity	93, 93.9%
Education	
12-16 years	67, 68.4%
>16 years	31, 32.6%
Employment	
Employed	38, 38.4%
Retired	50, 50.5%
Smoking Status	
Yes	5, 5.1%

Baseline exercise



How often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)?



Results: 6 and 12 weeks

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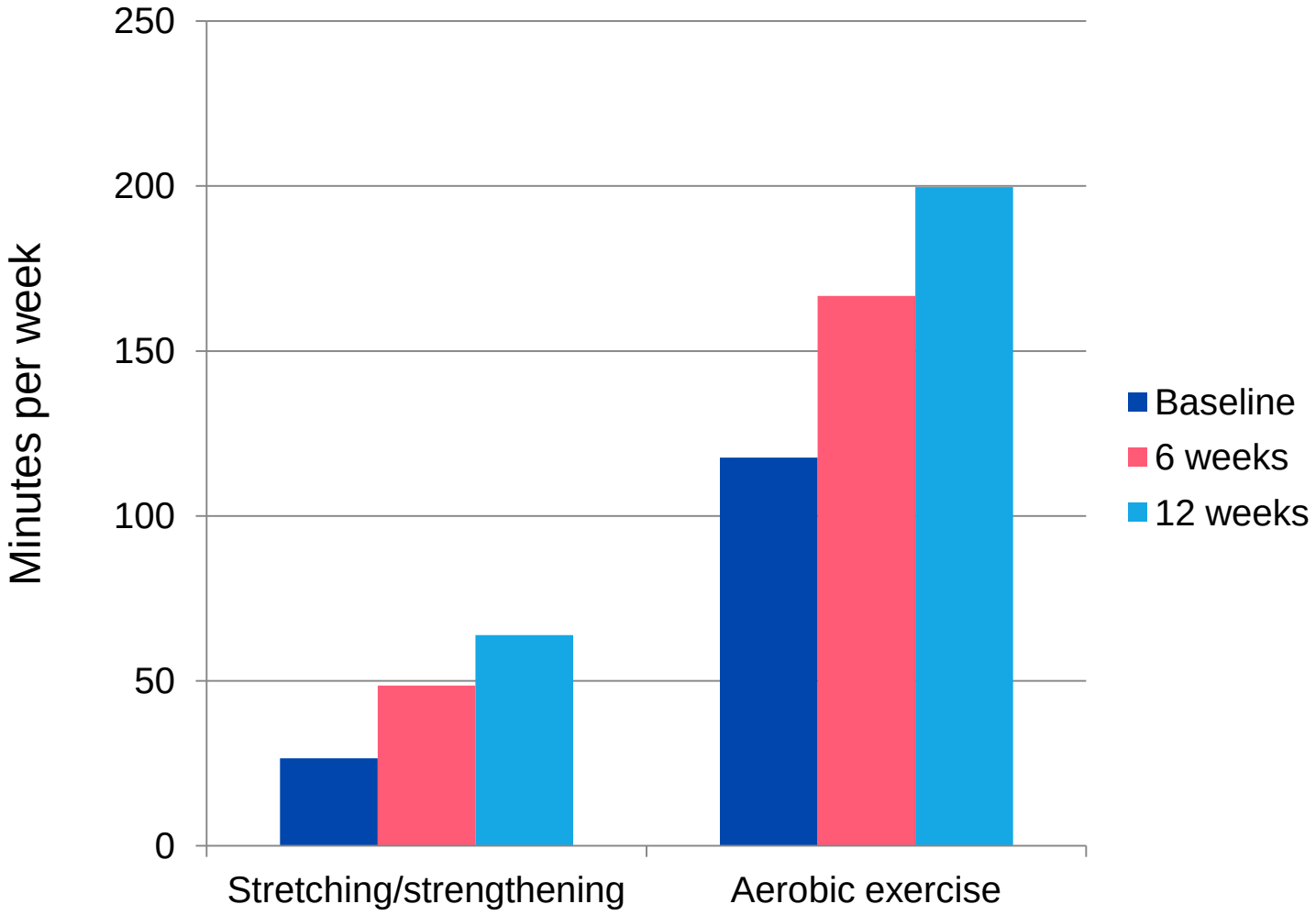
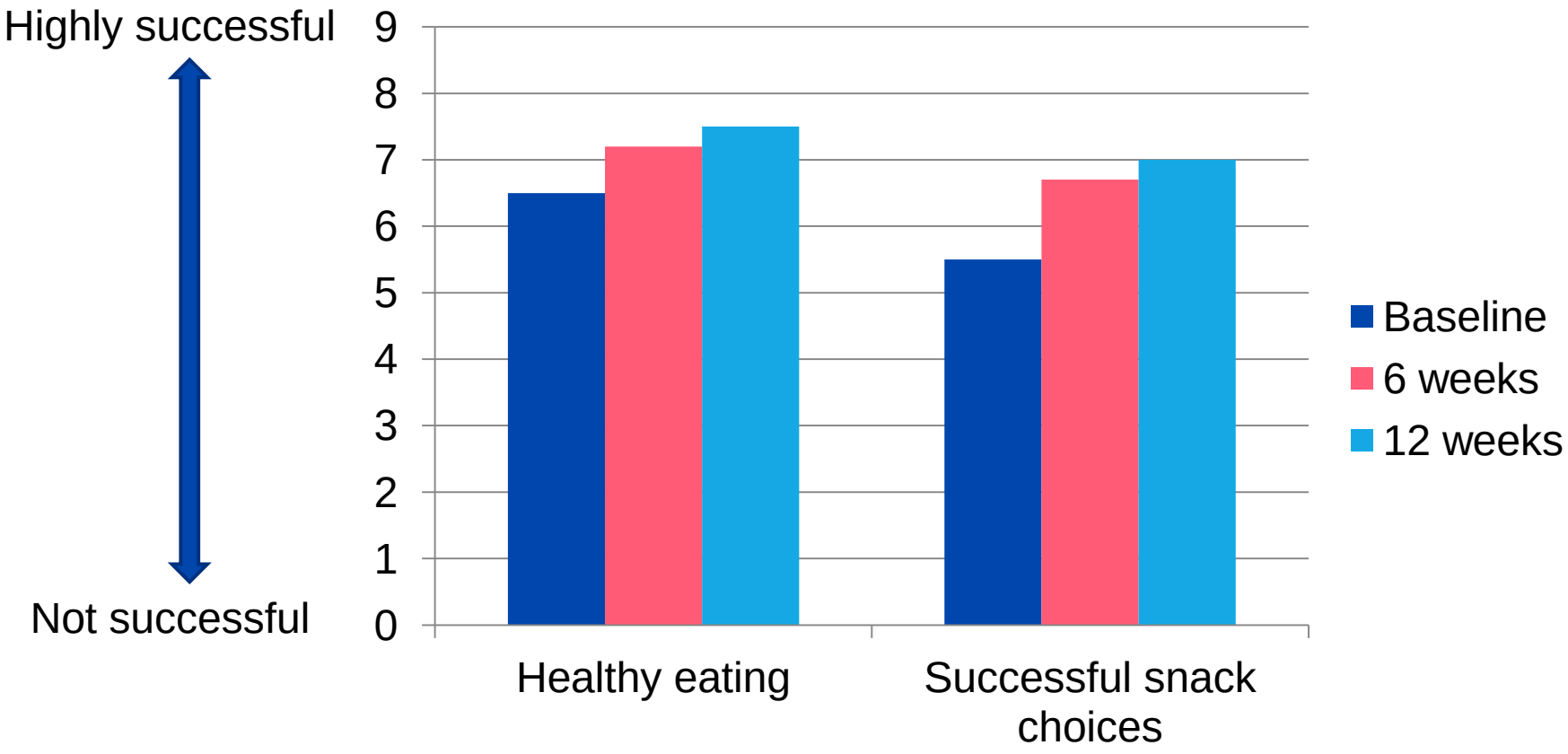
Changes in Activity



Changes in eating habits



Results: 6 and 12 weeks

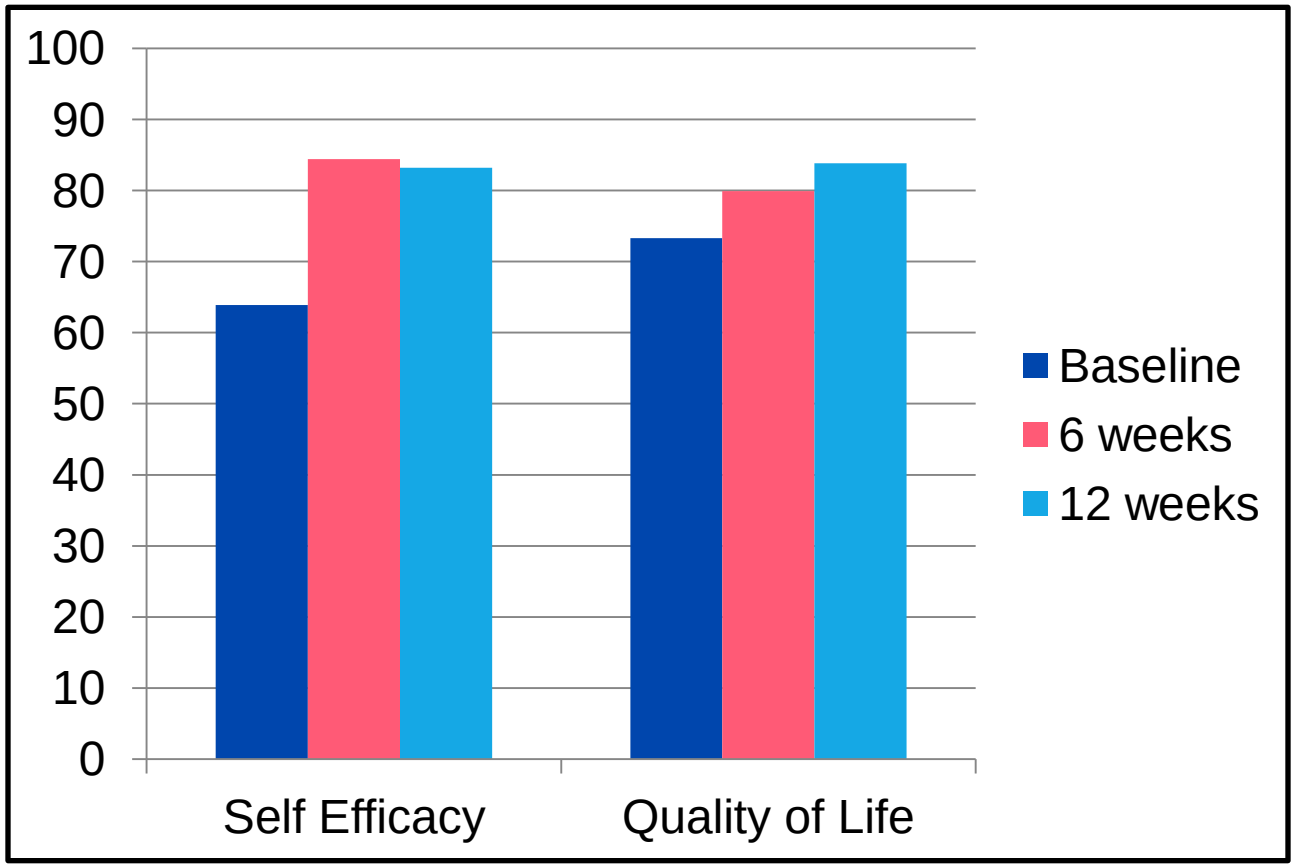
SECONDARY AIM

- To determine if the intervention has an impact on self-reported measures of self-efficacy and quality of life

Impact on Self-efficacy and QoL

Best

Worst



Conclusions

- Significant change (increase) in both activity and healthy eating behaviors from baseline at 6 and 12 weeks of wellness coaching
  - Wellness coaching was independently associated with increase in activity and healthy eating behaviors
- Significant improvement in self-efficacy and quality of life measures at 6 and 12 weeks of wellness coaching when compared to baseline

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Thank You

Rochester, MN

Jacksonville, FL

Scottsdale, AZ