

Relationships and Health Behavior Change: Rethinking Gender and Family Dynamics in Disease Management

Libby Richards, PhD, RN, ANEF, FAAN

Outline

- Significance of Topic
- Collaborative Research Journey
- Focus on Heart Disease



Interconnectedness of Family, Health Behaviors, & Chronic Disease

The Good and the Not-so-Good

- Intergenerational impact matters
- Spousal influence on health behavior is impactful
- Caregivers' own health behavior affects the patient
- Negative family dynamics can impede progress
- Family support predicts better adherence and chronic disease outcomes



Collaborative Journey of Dyadic Health Behavior Research

Over a decade in the making!

Health behavior change, with a specific focus on walking and exercise, may be more successful if shared with a partner:

Important sources of social support

Social partnering influences walking behavior. Having an available partner facilitates walking (Richards, et al., 2025).

One partner's readiness to change health behaviors (e.g., get more exercise) is associated with the other's self-efficacy to make the same change (Franks et al., 2012; Jackson et al., 2015)

Health behaviors, including exercise, tend to be concordant among couples as is health behavior change (Falba & Sindelar, 2008; Jeong & Cho, 2018; Richards et al., 2020)

Interventions that recognize/maximize the social environment in the adoption/ maintenance of health behaviors may be more effective than those focused on individuals (Franks & Richards, 2018; Richards & Franks, 2018)

Let's start at the beginning

- Systematic review of randomized PA intervention trials
- Databases: PubMed, SportDiscus, PsycINFO
- Inclusion criteria:
 - Randomized design
 - Spouse involvement
 - English language
 - PA measured as an outcome
- Searched up to 2017

'Let's move:' a systematic review of spouse-involved interventions to promote physical activity

Elizabeth A. Richards^a, Melissa M. Franks^b, Meghan H. McDonough^c and Kimberly Porter^a

^aSchool of Nursing, Purdue University, West Lafayette, IN, USA; ^bDepartment of Human Development & Family Studies West Lafayette, Purdue University, West Lafayette, IN, USA; ^cKinesiology Calgary, University of Calgary, Calgary, Canada

ABSTRACT

Introduction: Physical inactivity elevates risk of chronic conditions and all-cause mortality. Given that health behavior changes often co-occur within couples, spouse-involved physical activity interventions have the potential to increase and maintain physical activity behavior of both partners. The purpose of this systematic review was to synthesize studies of physical activity interventions that include both partners in marital dyads to determine whether and how active involvement of both partners shapes the physical activity behavior change process. **Methods:** Randomized trials ($N = 6$) published through June 2017 were included in this systematic review under the following conditions: (1) both partners were directly involved in the intervention treatment group(s); (2) couples were randomly assigned to study conditions; and (3) physical activity or exercise was assessed as a primary outcome. **Results:** The six trials included 783 couples, with mean ages ranging from 27 to 71 years. These studies of couples and physical activity change were guided by established socio-behavioral perspectives and used a variety of strategies to promote behavior change. Overall, each of these studies demonstrated improvement in physical activity behavior, though improvements in physical activity did not differ consistently between intervention and comparison groups and sometimes were short-lived. **Discussions:** This systematic review provides initial support, albeit limited, that spouse-involved interventions can be effective in increasing physical activity. Addressing the needs and behavior change of both partners has the potential to increase effectiveness of couple-focused approaches to promote physical activity initiation and maintenance.

ARTICLE HISTORY

Received 25 August 2017
Accepted 6 December 2017

KEYWORDS

Physical activity; couples; social support; spouse; dyad; exercise behavior change

Results

- 9 studies included, 1,227 couples
- Mean ages: 27–71 years
- PA was not the primary outcome in most trials
- Populations studied:
 - Overweight/obese (3)
 - Heart disease/elevated lipids (3)
 - Type 2 diabetes (1)
 - Prostate cancer survivors (1)
 - General non-clinical sample (1)
- 5 of 9 studies demonstrated increased PA
- Only 2 showed spouse-focused interventions were superior
- **Evidence was promising but remains limited**



SPOUSE-INVOLVED
INTERVENTIONS SHOW
POTENTIAL FOR PA
PROMOTION



MORE RESEARCH IS
NEEDED TO IDENTIFY
EFFECTIVE STRATEGIES



FUTURE STUDIES
SHOULD STRENGTHEN
SUPPORTIVE PARTNER
INTERACTIONS



DYADIC APPROACHES
MAY MAXIMIZE LONG-
TERM PA ADHERENCE

So we did more research!

Funded by Kinley Trust Foundation
& HDFS

INTERNATIONAL JOURNAL OF HEALTH PROMOTION AND EDUCATION
2018, VOL. 56, NO. 6, 280–288
<https://doi.org/10.1080/14635240.2018.1522266>

 **Routledge**
Taylor & Francis Group

 Check for updates

Walking for our health: couple-focused interventions to promote physical activity in older adults

Melissa M. Franks^a, Elizabeth A. Richards^b, Meghan H. McDonough^c, Sharon L. Christ^d and Mary E. Marshall^a

^aDepartment of Human Development and Family Studies, Purdue University; ^bSchool of Nursing, Purdue University; ^cDepartment of Health & Kinesiology, Purdue University; ^dDepartment of Human Development and Family Studies and Department of Statistics, Purdue University

Partnered with Cooperative Extension

Partners were randomized (together) into one of two goal-setting conditions:

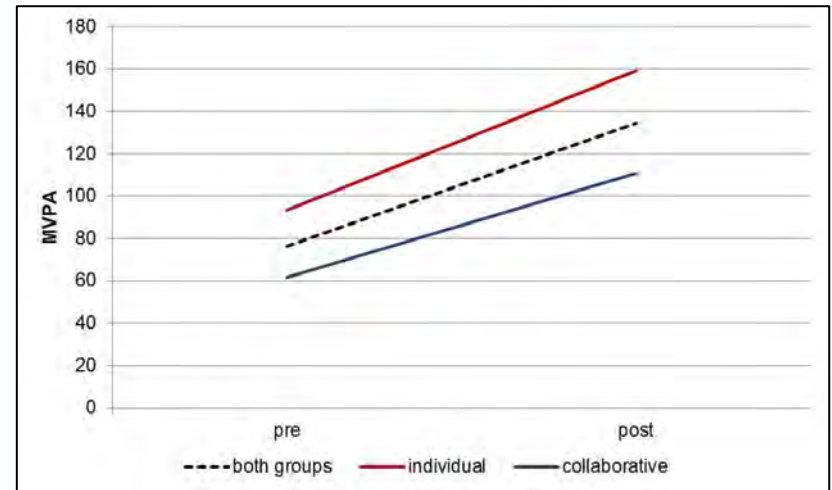
- *Concurrent individual* (n=14 couples)
- *Collaborative* (n=14 couples)

Partners attended a group session specific for their intervention condition and received information about healthy PA targets and rates of progression for realistic, safe increases in PA.

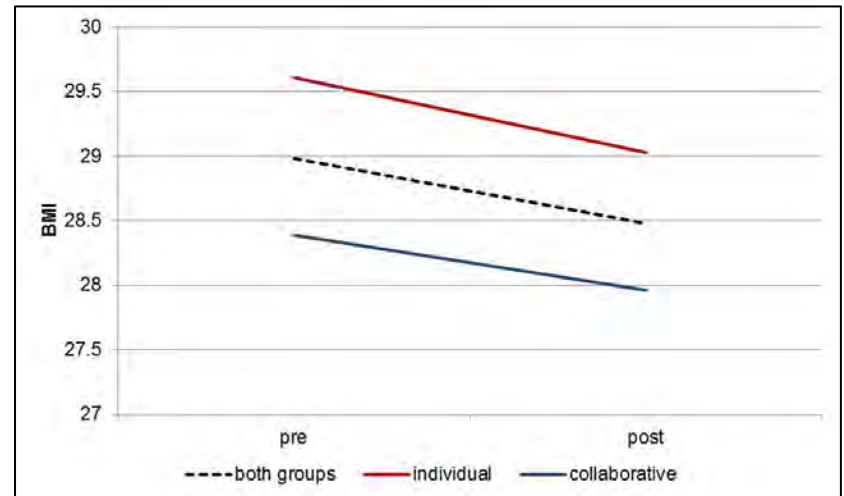
Participants also received 8 weekly phone calls to assist in setting and revising goals

Similar levels of change in MVPA and BMI were detected in both intervention groups

- Average weekly MVPA increased by 58 minutes ($p < 0.01$) between pre- and post-intervention eight weeks later.
- Average BMI decreased by 0.50 kg/m² ($p < 0.01$) and weight decreased by 1.42 kg ($p < 0.01$) between pre- and post-intervention.



Change in MVPA Pre-Post



Change in BMI Pre-Post

This got us thinking about gait speed

Gait speed is of such health significance that it has been referred to as a 'vital sign'

Collaboration expanded to include Shirley Rietdyk, Professor, HK

- Gait speed provides significant information about current and prospective health status
- Strongly associated with fall-risk, hospitalizations, and mortality
- Associations between gait speed and function, including accelerated aging, are not limited to older adults, but also extend to generally healthy midlife adults





Full length article

Changes to gait speed when romantic partners walk together: Effect of age and obstructed pathway

HyeYoung Cho^{a,b}, Anna Forster^{b,c}, Sharon L. Christ^{b,d,e}, Melissa M. Franks^{b,u}, Elizabeth A. Richards^{b,c}, Shirley Rietdyk^{a,b,u}

^a Department of Health and Kinesiology, Purdue University, West Lafayette, IN, USA

^b Center for Aging & the Life Course, Purdue University, West Lafayette, IN, USA

^c School of Nursing, Purdue University, West Lafayette, IN, USA

^d Human Development & Family Studies, Purdue University, West Lafayette, IN, USA

^e Statistics, Purdue University, West Lafayette, IN, USA

What happens when we walk together?

Two community samples:

-38 older couples, 50 years of age and over

-35 younger to midlife couples, ages 25-49 years old

Gait speed was assessed on a clear path using the Midlife in the United States Survey (MIDUS) protocol.

Physical activity was assessed with Actigraph™ accelerometers which participants wore for 7 days



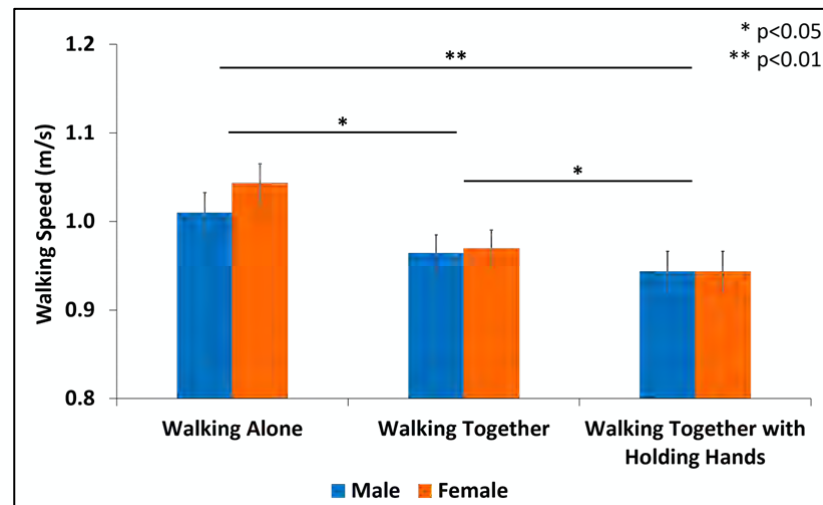
Funded by the Center for Families & American Nurses Foundation

Results

Male speed was not different from female speed in the three conditions.

Both males and females reduced speed and step length when walking together ($p \leq 0.01$); speed was further reduced while holding hands ($p = 0.03$)

Adapting to a partner's speed was not consistent across the lifespan



So what?



- Across the adult lifespan, when walking together, both partners decreased gait speed by a clinically meaningful amount (≥ 0.05 m/s).
- Walking with a partner may increase walking activity due to social support. But....reduced speed when walking together may unintentionally reduce health benefits and gait quality in both partners.
- Future research should identify how health is impacted by the trade-off between increased walking activity and reduced gait speed when romantic partners walk together.

Media attention

**Walking alone
may be better for
fitness**

**If you hate smug couples that
exercise together, this study will make
you feel better**

**Couples may
need to speed up**

**Walking habits to
pay attention to**

**Walking with a
partner is great but
might slow you down**

**The unexpected
downside of walking with
your partner**

**Keep pace: The
implications for couples
walking together**

**Why holding hands and
walking don't go hand
in hand**

ORIGINAL
Research

Elizabeth A. Richards, PhD, RN, Sharon L. Christ, PhD,
Shirley Rietdyk, PhD, Elizabeth Teas, MS,
and Melissa M. Franks, PhD

Association of Physical Activity and Gait Speed: Does Context Matter?

Abstract Background: Physical activity (PA) is associated with gait speed, and both are recognized predictors of important health outcomes. The role of social context, such as PA of one's spouse, in the association between PA and gait speed is largely unexplored.

Methods: In our dyadic study of 69 couples, we objectively assessed each partner's moderate to vigorous PA (MVPA) and gait speed. Associations of MVPA and gait speed were tested using actor-partner interdependence models in a structural equation modeling framework. Whether partners' typically exercise together was examined as a moderator of these associations. Results: A nonlinear association was observed where higher MVPA was associated with faster gait speed, but only when MVPA was below average (husbands $\beta = -.517$; $P = .002$; wives $\beta = -.483$; $P = .009$). No moderating effects of exercising together were detected for husbands' or wives' MVPA on their own or their partners' gait speed. Conclusions: In this investigation of couples, the association between MVPA and gait speed emerged only when nonlinear effects were

considered. Findings suggest that the PA and gait speed association may be more nuanced than previously examined. Additional consideration of contextual factors that may alter the complex association between MVPA and gait speed is warranted.

to as a "vital sign."² Specifically, gait speed provides significant information about current and prospective health status, and is strongly associated with fall-risk, hospitalizations, and mortality.^{2,3} Associations between gait speed and function, including accelerated

 "In this investigation of active couples, the association between MVPA and gait speed emerged only when nonlinear effects were considered." 

Keywords: health promotion; health behavior; walking; shared exercise; marriage

Introduction

Regular engagement in physical activity (PA) has many known health benefits, including preservation of gait speed throughout adulthood.¹ Gait speed is of such health significance that it has been referred

aging, are not limited to older adults, but also extend to generally healthy midlife adults.^{4,5} In this study, we examined the association of PA and gait speed, and explored whether the context of PA (i.e., exercising together with a marital partner) moderates the PA—gait speed association.

Optimal gait speed relies on multiple physiological systems: cardiovascular, respiratory,

Same sample but added examination of the role of social context.

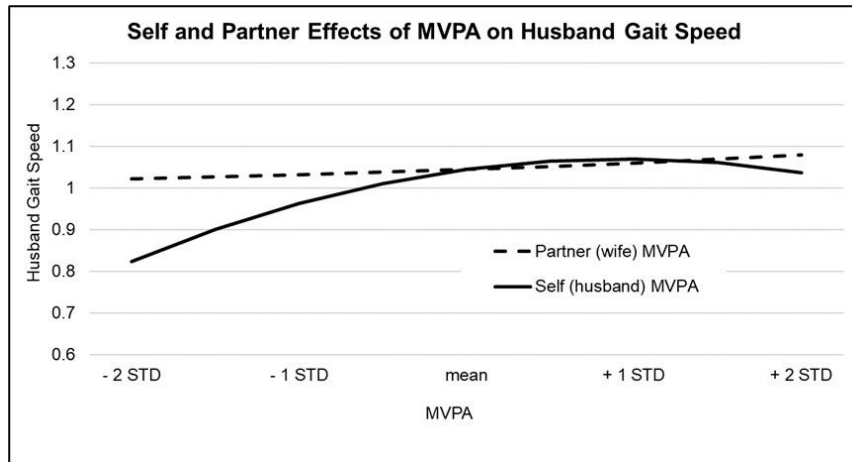
How does the physical activity of one's spouse relate to the association between one's own physical activity and gait speed.

Does the association between physical activity and gait speed differ between couples who routinely exercise together and those who do not?

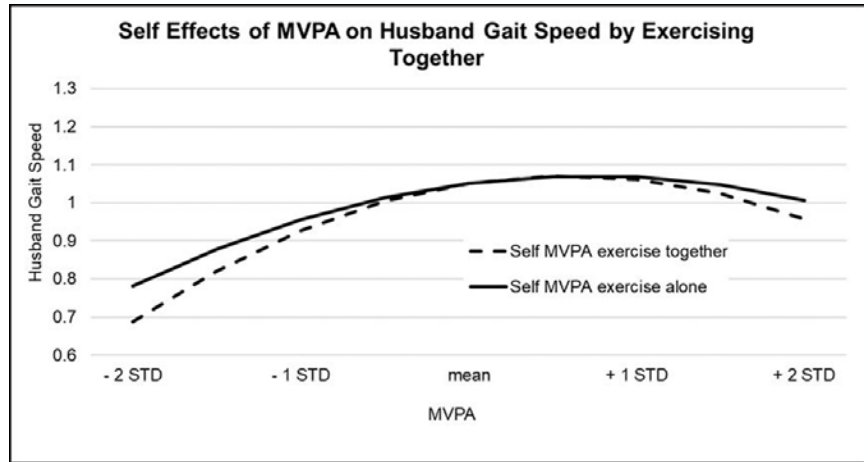
Funded by the Center for Families & American Nurses Foundation

Results

Nonlinear associations



A nonlinear association was observed where higher MVPA was associated with faster gait speed



Exercising together did not associate with either partner's gait speed (both $p > 0.20$) directly, but it did have a moderation effect on the quadratic component of the MVPA effect for husband's own gait speed ($p = 0.086$).

Findings suggest that the PA and gait speed association may be more nuanced than previously examined

Nonlinear association between MVPA and gait speed

For participants below mean levels of MVPA, engagement in higher levels of exercise was associated with faster gait speed. In contrast, at or above the mean MVPA there was no meaningful difference in gait speed related to levels of exercise.

Lack of partner effects

A moderating effect of exercising together on the association between partner's MVPA and gait speed was not detected.

Gender and Gender Roles Matter

Let's Focus on Heart Disease



- Leading cause of death worldwide
- Incidence increases with age, affecting over $\frac{3}{4}$ of men and women by age 79
- Participation in exercise-based cardiac rehabilitation can improve functional capacity and enhance well-being

Exercise Adherence is Hard

- Exercise adherence after cardiac rehabilitation is suboptimal
- Adherence to home-based cardiac rehabilitation exercises is crucial for long-term benefits and tertiary prevention.
- Non-adherence has been consistently linked to worse clinical outcomes, including increased risk of rehospitalization, revascularization, and mortality.



Gender Disparities

- Gender-specific disparities are pronounced across the continuum of cardiac rehabilitation
- Most cardiac rehabilitation intervention studies that involve a care partner component have primarily included patients who are men (and married) with care partners who tend to be women.



Care Partners beyond the Spouse

Little attention has been given to care partner roles beyond the spouse

- Initial research suggests that at cardiac rehab discharge, patients without a spouse have lower exercise self-efficacy compared to their married counterparts.
- Some studies have suggested that an ideal care partner may be someone who can maintain the same exercise pace and schedule – which may not be a spouse.



*So let's get to
know more about
care partners*

So Meet the Dream Team



Melissa Franks



Katrina Riffin



Kristin August



Matt Harber



Megan Mason



Billy Sherlow

Women Managing Heart Disease: Involvement of Spouse and Non-Spouse Care Partners

Funded by CTSI
Trailblazer

American Journal of Lifestyle Medicine
OnlineFirst
Copyright © 2025 The Author(s). Article Reuse Guidelines
<http://dx.doi.org/10.1177/15598276251358184>

Sage Journals

Original Research Article

Women Managing Heart Disease: Involvement of Spouse and Non-Spouse Care Partners

Melissa M. Franks, PhD¹, Megan B. Mason, MS², Kristin J. August, PhD^{2,3}, William Sherlow, MS⁴, Matthew P. Harber, PhD^{5,*}, Katrina Riffin, MS⁶, and Elizabeth A. Richards, PhD⁷

Abstract

Purpose: Heart health is integral to promoting women's overall health and healthcare. Following a cardiac event, engagement in recommended health-related activities (e.g., maintaining a healthy diet) speeds recovery and improves health. We investigate women's perception of care partners who are involved in helping manage their heart disease. **Methods:** Data were drawn from two pilot studies (N = 54); interviews with women from hospital-based outpatient cardiac rehabilitation centers (study one), and online surveys completed by women with heart disease (study two). We compared women's reports of involvement of their care partner (spouse vs non-spouse) in their health-related activities. **Results:** The proportion of women who identified their spouse as the person most involved in their disease management was equal to that of women who identified another network member (e.g., adult child or sibling). Contrary to expectation, care partner involvement in women's health-related activities did not differ by care partner role relationship. **Conclusions:** Spouses and other close network members play a key role in women's heart disease management. Leveraging involvement of care partners from women's social network can galvanize support for disease management to improve health and quality of life for women with heart disease.

Keywords

care partner, women's health, heart disease management, cardiac rehabilitation

Methods

Participants: Data from 2 pilot studies (n=54)

- Study 1: interview study, $n = 32$ women; data collected between August 2022 and July 2023; recruited from hospital-based outpatient cardiac rehabilitation centers in central Indiana.
- Study 2: online survey study, $n=22$ women; data collected between November and December 2023.
- The total sample of 54 women included those who:
 - 1) had participated in outpatient cardiac rehabilitation
 - 2) 40 years of age or older
 - 3) residing in the United States
 - 4) able to read and respond in English

Measures

Care Partners

- Participants identified individuals close to them who helped them with managing their heart disease (care partners).
- Women's reports of relationship with this care partner (i.e., spouse, adult child, sibling, other) were dichotomized as spouse or non-spouse.
- Participants reported whether care partners were involved in aiding them with health-related activities to properly manage their heart disease (yes/no):
 - maintaining a healthy diet
 - maintaining regular exercise
 - monitoring blood pressure
 - accompanying them to healthcare appointments.

Care partner type	Spouse (n=27)	Non-spouse (n=27)
Participant age, years**	59.7 (9.8)	68.7 (11.9)
Participant marital status (% married)***	26 (96.3%)	10 (37.0%)
Participant self-rated health		
Excellent/very good	6 (22.2%)	11 (40.7%)
Good/fair/poor	21 (77.8%)	16 (59.3%)
Employment status (% yes)*	17 (63.0%)	9 (33.3%)
Race (% White)	26 (96.3)	25 (92.6%)
Participant physical function		
Can perform all activities w/o SOB	8 (29.6%)	5 (18.5%)
SOB with strenuous activities	13 (48.1%)	17 (63.0%)
Becomes SOB with daily activities	6 (22.2%)	5 (18.5%)
Care partner gender (% female)***	2 (7.4%)	17 (63.0%)
Living arrangement (% reside together)***	24 (88.9%)	7 (25.9%)
Relationship quality	6.7 (0.5)	6.7 (0.5)

***Participant
and Care
Partner
Characteristics
(Participant
Reports)***

Care Partner Involvement in Health-Related Activities

	Spouse Care Partner (n=27)	Non-spouse Care Partner (n=27)
Health-related activity	n (% yes)	n (% yes)
Help you maintain healthy diet	19 (70.4%)	18 (66.7%)
Help you maintain regular exercise	21 (77.8%)	16 (59.3%)
Help you monitor blood pressure	8 (29.6%)	11 (40.7%)
Accompany you to HCP visits	17 (63.0%)	14 (51.9%)

***Now we need to know
more about care
partners other than a
spouse***

Individuals' Experiences of Care Partner Involvement in Heart Disease Management: A Pilot Study

Article In Press: *Families, Systems, and Health*

Cross-sectional Prolific survey pilot data of persons with heart disease (N=136)

- 74 (54.4%) of participants with heart disease indicated having a care partner.
 - More likely to be married (71.6% vs 48.4%)
 - No significant age difference
 - 84% lived with care partner
 - 65% were spouses; 14% were children; 8% were friends; 7% 'other'

Experiences of Care Partner Involvement (N = 74)

	Men (n = 43)	Women (n = 31)	Test of Significance Difference ^a	
Care partner involvement	% or M(SD)	% or M(SD)	χ^2 (df)	
Live with care partner (% yes)	86.0%	80.6%	0.39 (1)	
Primary care partner type			8.35 (4)	
Spouse	68.3%	63.3%		
Child	7.3%	23.3%		
Sibling	14.6%	0.0%		
Friend	7.3%	6.7%		
Other	2.4%	6.7%		
Primary care partner gender			20.28 (1)***	
Female	83.7%	32.3%		
Male	16.3%	67.7%		
Frequency of care partner involvement ^b			0.31 (2)	
At least once per month				
At least once per week	17.5%	13.3%		
At least once per day	35.0%	40.0%		
	47.5%	46.7%		
Types of involvement (% yes)				
Helps maintain a healthy diet	86.0%	87.1%	0.02 (1)	
Accompanies to HCP visits	79.1%	67.7%	1.21 (1)	
Helps maintain regular exercise	65.1%	67.7%	0.06 (1)	
Helps monitor blood pressure	54.8%	51.6%	0.07 (1)	
Prevents engagement in healthy behaviors	25.6%	30.0%	0.17 (1)	
			t (df)	Cohen's d
Relationship satisfaction with care partner [Range: 3.40-7.00]	6.19 (0.14)	6.61 (0.11)	-2.25 (72)*	-0.531

Care partner involvement is prevalent among persons with heart disease, with some gender differences in these experiences. Future research should explore how to best integrate care partners into disease management to benefit both persons with heart disease and their care partners.



Future Directions

Broaden our examination of the social context: support or control from family and friends, exercising with a partner, or participation in group classes

Pilot data for R01:

Looking for **MONEY**

- HAPA Framework
- Expiwell Daily Assessments
- Continuous Fitbit monitoring



Thank You

