

Exercising virtually during the pandemic – The Community Adult Fitness program

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Introduction

- Many chronic disease rates higher in Gratiot County than MI and national averages
 - All-cause mortality 1-2% higher than MI and 7-9% higher than national average
 - Ischemic heart disease 21-23% higher than MI and 42-57% higher than national average
 - Diabetes 5% higher than MI and 11% higher than national average in females, 9% lower than MI and 1% lower than national average in males
- Chronic disease related to lifestyle factors such as diet and physical (in)activity



Community Adult Fitness program

- Started in 2018 at Alma College
- Students in IPHS major act as exercise leaders for individuals and/or small groups of community-dwelling adults
 - Preference for low-income individuals and/or those with medical conditions
- 8-15 participants/year, typically train at Alan J. Stone Recreation Center on AC campus



CAF as part of BCBSM grant

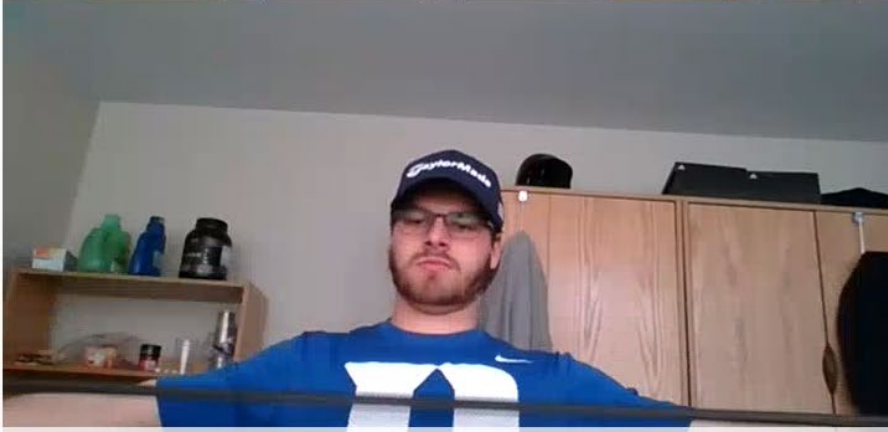
- Year 1 (~8-month program) – 11 participants
- Training
 - 2 sessions/week, 60 minutes/session
 - In-person at rec center, 1-on-1 or small group
 - Cardio and resistance training
- Average fitness changes
 - Weight loss of 3.7 kg
 - Waist circumference decrease of 7.4 cm
 - VO₂max increase of 5.5 ml/kg/min (~1.6 METs)
 - 9% increase in handgrip strength
 - 51% increase in push-up completion
 - 9% increase in sit-and-reach flexibility
 - Small improvement in mental health



CAF as part of BCBSM grant

- Year 2 (virtual, 8 months*) – 8 participants
- Training
 - 2 sessions/week, 60 minutes/session
 - Virtually via Microsoft Teams, small group
 - Cardio and resistance training
 - Body weight, dumbbells, resistance bands





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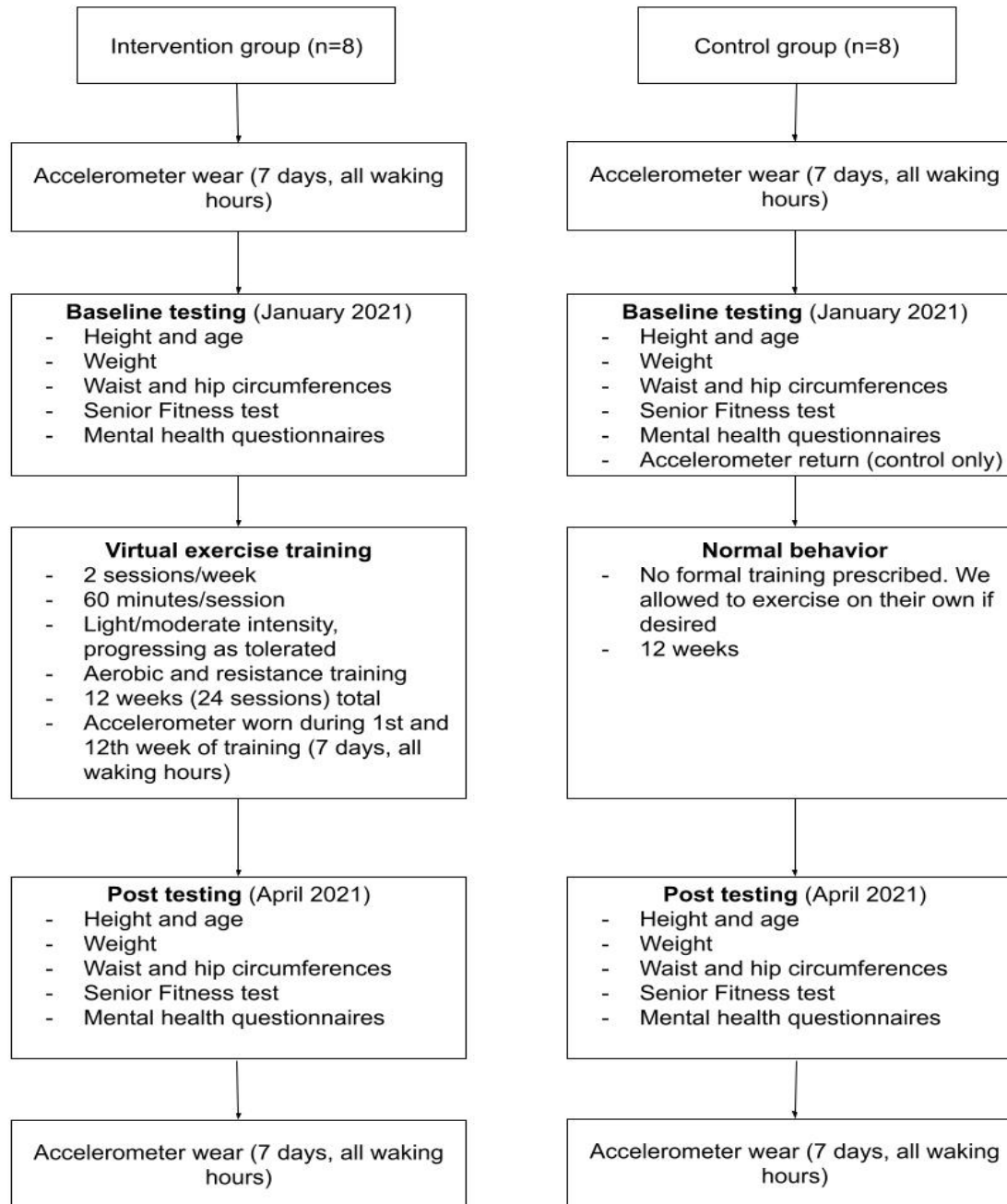


Table 1. Fitness testing, accelerometer-measured, and mental health data at baseline and post intervention.

Fitness testing data	Intervention		Control	
	Baseline	Post	Baseline	Post
Age (years)	57.5 (13.8)	57.9 (13.7)	53.0 (11.6)	53.4 (11.7)
Height (cm)	162.6 (8.1)	162.6 (8.1)	168.8 (7.7)	168.8 (7.7)
Weight (kg) [']	102.2 (27.8)	99.1 (27.1)*	83.4 (16.6)	83.6 (17.2)
Body mass index (kg/m ²)	38.2 (8.0)	37.0 (7.8)*	29.2 (5.3)	29.3 (5.5)
Waist/hip ratio	0.91 (0.08)	0.88 (0.05) [^]	0.90 (0.04)	0.88 (0.03)*
2-minute step test (# steps)	86.1 (13.8) 44 th %ile	100.3 (18.4)* 60 th %ile	105.0 (17.8) 72 nd %ile	117.7 (15.2)* 80 th %ile
30-second arm curl (# curls)	16.5 (2.4) 54 th %ile	19.9 (4.6)* 75 th %ile	21.6 (4.8) 78 th %ile	24.0 (6.9) [^] 81 st %ile
30-second chair stand (# stands)	14.3 (2.1) 48 th %ile	16.6 (2.9) [^] 67 th %ile	19.1 (4.9) 73 rd %ile	20.6 (6.0)* 75 th %ile
2.5 meter timed up-and-go test (seconds)	9.2 (4.9) 8 th %ile	8.4 (5.4)* 33 rd %ile	5.8 (1.0) 34 th %ile	5.6 (1.4) 40 th %ile
Chair sit-and-reach test (cm)	-0.4 (4.3) 30 th %ile	0.1 (5.0) 46 th %ile	-0.9 (2.2) 25 th %ile	0.8 (2.7) 40 th %ile
Back scratch test (cm)	-7.3 (2.9) 10 th %ile	-7.2 (3.4) 12 th %ile	-4.3 (2.7) 21 st %ile	-5.0 (2.0) 16 th %ile

Conclusions

- Virtual training effective, well tolerated, and enjoyed by participants and trainers
- May be an effective way to make exercise accessible to rural-dwelling adults without access to recreational opportunities
- Not preferred method of training, but helped high-need individuals stay active and improve fitness/health during pandemic

