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THE PACT TO PROMOTE PHYSICAL ACTIVITY IN A GERIATRIC OUTPATIENT SETTING: A PILOT STUDY

Jaime B. Gerber, MD^{*}, Patricia A. Bloom, MD[†], and Joseph S. Ross, MD, MHS^{†,‡}

^{*}Department of Medicine, University of Washington, Seattle, WA

[†]Department of Geriatrics and Palliative Medicine, Mount Sinai School of Medicine, New York, NY

[‡]HSR&D Research Enhancement Award Program and Geriatrics Research, Education, and Clinical Center, James J. Peters Veterans Administration Medical Center, Bronx, NY

TO THE EDITOR

Regular physical activity enhances quality of life and lowers rates of mortality, serious chronic disease, falls, and disability.¹ However, activity promotion is considered difficult by physicians² and the United States Preventative Services Task Force (USPSTF) found insufficient evidence that physician counseling is effective in improving physical activity.³ Prior work demonstrated that successful physical activity counseling in outpatient settings is personalized and individualized^{4, 5} and addresses both potential concerns and barriers.^{6, 7} We developed a brief intervention to promote daily activity among older adults during ambulatory care visits: the physical activity contract-tailored (PACT). The PACT facilitates individualized counseling and documentation of physical activity and addresses specific concerns and barriers about activity. Accordingly, we piloted the PACT and examined its impact on weekly minutes of physical activity.

METHODS

Patients were enrolled prospectively during one month from the Coffey Geriatrics Practice at the Martha Stewart Center for Living at the Mount Sinai Medical Center if they were able and willing to engage in any form of physical activity. We excluded adults with severe cognitive impairment or other medical contraindications to physical activity. Mount Sinai School of Medicine institutional review board approval was obtained prior to study.

PACT

The PACT was developed using established activity promotion principles⁸ from a previously presented framework⁹ that was subsequently revised and integrated within an electronic medical record (EMR). The PACT (Appendix Figure) provides clear moderate-level activity instructions for patients, including routine activities equivalent to 30 minutes of walking,¹⁰ and facilitates counseling by clinicians, prompting them to address concerns and modify the physical activity plan when necessary.

Correspondence: Joseph S. Ross, MD, MHS, Mount Sinai School of Medicine, One Gustave L. Levy Place, Box 1070, New York, NY, 10029, (telephone) 212-241-9370, (fax) 212-860-9737, joseph.ross@mssm.edu.

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Author contributions: All authors were responsible for the conception and design of this work, participated in the analysis and interpretation of the data, and critically revised the manuscript for important intellectual content. Drs Gerber and Ross drafted the manuscript. Dr. Ross provided supervision and conducted the statistical analysis.

Study Design

At baseline, demographic characteristics, current weekly physical activity (type(s) of activity and minutes); self-reported health status; routine vital signs (weight, height, blood pressure, and pain score on 0–10 scale); and use of assistive device(s) were collected. Next, the PACT was completed to determine and affirm specific physical activity goals, based on activities of interest, baseline activity, and functional status, saved as part of the EMR, and printed for the patient. All patients were contacted by telephone after 4 weeks and followed-up in-person after 8 weeks to review progress, encourage participation and address concerns. Weekly minutes of physical activity were measured at 4 and 8 weeks, converted into walking-equivalent minutes, as were self-reported health status, pain, blood pressure and body mass index. Subjective feedback was also collected.

Statistical Analysis

We first performed descriptive analyses. We then used paired Wilcoxon Sign-Rank tests and paired one-way analyses of variance (ANOVAs) with medians to compare dichotomous and continuous outcomes at baseline and at 4 and 8 weeks, carrying forward last observations for dropouts. All analyses were conducted using JMP 7.0.1 Software (SAS Institute Inc., Cary, NC) and all statistical tests were 2-tailed, using a type I error rate of 0.05.

RESULTS

Participants included 50 community-dwelling adults aged >65 years. Mean age was 80 years (range 65–95 years) and 74% were female (TABLE). After 4 weeks, 8 participants dropped out; after 8 weeks, an additional 3. There were no significant demographic differences between study completers and dropouts.

At baseline, participants reported 172.2 median walking-equivalent minutes of weekly physical activity (TABLE). After 4 weeks, weekly physical activity had increased significantly (305.5 median minutes; $p<0.001$) and remained significantly greater after 8 weeks (329.0 median minutes; $p=0.003$). At baseline, 26% of participants reported pain (pain score > 0). After 4 weeks, a significantly greater proportion reported pain (46%; $p=0.03$), but not after 8 weeks (38%; $p=0.21$). There were no significant differences from baseline at 4 or 8 weeks in self-reported health status, blood pressure, or body mass index.

At study conclusion, 77% reported participation was helpful; responses shared several themes: increased activity/physical benefits; increased mindfulness; increased motivation; and provision of a coping strategy.

DISCUSSION

The PACT, a tailored physical activity contract integrated within an EMR, facilitated individualized counseling and documentation of physical activity and was associated with increased weekly physical activity after 4 and 8 weeks. This small pilot study suggests that simple, individualized counseling may be readily adopted and used effectively by physicians to promote physical activity among older adults. Because higher rates of pain were reported at 4 weeks, although not at 8 weeks, future research should monitor both potential beneficial and adverse outcomes during physical activity promotion.

There are several limitations. First, as a small pilot study, our findings need to be replicated through subsequent research. Second, our study may not be generalizable to other clinics, particularly those without an EMR. Finally, without a control group, our study may have been affected by volunteer bias.

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Data access and responsibility: Drs. Gerber and Ross had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

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ID # _____		Date _____	
PACT, the PHYSICAL ACTIVITY CONTRACT-TAILORED			
PHYSICAL ACTIVITY			
FREQUENCY	_____ Days Per Week		
INTENSITY	Moderate: Comfortable pace, can talk normally while doing activity		
INSTRUCTIONS		TIME	
Warm-Up:	Start slowly, gradually build up to moderate activity	5 Minutes	
Moderate Activity:	Do _____, as long as its enjoyable	_____ Minutes	
Cool-Down	Stretches of arms and legs and deep breathing	5 Minutes	
ACTIVITY SUGGESTIONS (equivalent to 30 minutes of walking)			
Stair climbing		15 minutes	
Swimming		20 minutes	
Biking		20 minutes	
Dancing		25 minutes	
Yard Work		25 minutes	
Heavy house cleaning (sweeping, mopping, vacuuming)		25 minutes	
WALKING		30 minutes	
Yoga		30 minutes	
Light house cleaning (dusting, straightening up)		60 minutes	
SPECIFIC INSTRUCTIONS (including precautions and modifications)			
SIGNATURES			
_____		_____	
(patient)		(clinician)	

APPENDIX FIGURE.

Pact, the Physical Activity Contract-Tailored.

TABLE

Participant characteristics and weekly physical activity minutes, self-reported health status, pain, blood pressure, and body mass index after engagement in a physical activity contract-tailored (PACT).

PARTICIPANT CHARACTERISTICS	SURVEY PERIOD		
	Baseline (n=50)	4 Weeks (n=42)	8 Weeks (n=39)
Mean age (standard deviation)	80.0 (8.2)	79.8 (8.3)	79.6 (8.2)
Female sex, %	74	79	77
White race, %	58	50	51
Assisted device use, %	52	55	51
OUTCOME MEASURES *			
Median weekly walking-equivalent physical activity minutes (range)	172.2 (0–1284)	305.5 ** (20–1138)	329.0 *** (20–878)
Excellent or very good self-reported health status, %	24	22	16
Pain score > 0, %	26	46 ****	38
Blood pressure ≤ 140/90 mmHg, %	64	Not collected	62
Median body mass index (range)	27.1 (16.4–43.4)	Not collected	27.2 (16.4–42.0)

* All outcome measures calculated after carrying forward participants' last observation for dropouts.

** P < 0.001 for the difference in median weekly walking-equivalent physical activity minutes at 4 weeks when compared with baseline.

*** P = 0.003 for the difference in median weekly walking-equivalent physical activity minutes at 8 weeks when compared with baseline.

**** P = 0.03 for the difference in pain score at 4 weeks when compared with baseline.