The Community Fitness Passport Program:
A culturally-tailored intervention of physical activity for African-Americans with diabetes

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Introduction

- African-Americans in Chicago experience disproportionate rates of diabetes-related morbidity and mortality. Accessible and affordable exercise programs that address barriers to exercise are a necessity.
- There are few existing studies addressing physical activity needs among racial/ethnic minorities living in urban environments. There has also been limited research on culturally tailored, community-based exercise programs for minorities with diabetes.
- To address this need, the Community Fitness Passport Program (CFPP), an initiative of an academic/community partnership was developed as program of fitness education, interactive physical activities, and social support among low-income African-Americans with diabetes.

Methods

Project:
The Community Fitness Passport Program (CFPP) has 3 aims:
- To address the internal and external barriers to physical activity.
- To increase self-efficacy in performing physical activity, by introducing participants to a series of culturally-tailored activities that were accessible to all skill levels and would build confidence over time.
- To increase knowledge and utilization of local of community-based resources among participants for physical activity.

Design:
- Pre/post, mixed methods design with follow-up at 10 weeks (program end) and 6 months post-program end with surveys and clinical measures. Focus groups were also performed at 6 months post-program end.
- Participants used 'passports' to explore local community resources (e.g. local churches, YMCAs, park districts) and participate in culturally-tailored physical activities (e.g. Zumba, gospel and soul-infused aerobics).

Sample:
- Urban, African American patients and community members with diabetes mellitus receiving medical care at academic medical center or federally qualified health centers.

Analysis:
- Surveys (measuring reported barriers, knowledge, attitudes and stages of change), clinical measures (BMI, HbA1c), and attendance data were collected and analyzed using McNemar's test and t-tests; statistical significance was defined as a p-value <0.05.
- Focus groups were conducted to assess knowledge and attitudes about physical activity, motivators for physical activity, barriers to exercise, and overall feedback on the program.
- Evaluation measures were informed by the Stages of Change (Transtheoretical Model) and the Social Cognitive Theory.

Results

Table 1: Patient characteristics (n=32)

	n	%
Male	4	12.5
Age (years), mean(SD), range	55.4 (10.2), 30-75	
Age group		
<55	15	46.9
55-64	13	40.6
65+	4	12.5
African American	100	100
Hispanic	1	3.1
Diabetes history (years), mean(SD), range	11.1 (10.0), 0.83-45	
Education		
High School	10	31.3
College	10	31.3
Professional/Graduate	1	3.1
Technical/Vocational	5	15.6
Other/Unknown	6	18.8
Income		
< 15,000	14	43.8
15,000 - 24,999	6	18.8
25,000 - 49,999	5	15.6
> 50,000	2	6.2
Unknown	5	15.6
Insurance		
Medicaid/Medicare	20	62.5
Private	6	18.8
Uninsured/Unknown	6	18.8

- Of the 32 enrolled participants, 18 (56%) attended more than 3 sessions.
- The average number of sessions attended was 7.7 sessions (out of 10 total) with an average of 8-9 participants/session.
- At post-program (10 weeks) reported overall satisfaction with the program. The majority (77%) rated the program as "excellent".
- There were no significant improvements in clinical outcomes (BMI or HbA1c).

Table 2: Survey Results: Difference in Stages of Change

Stage of change	Pre- (n=18)	Post- (n=15)	Follow-up (n=14)	Pre- vs. Post-Difference	Pre- vs. Follow-up Difference
1. Pre-contemplation, mean(SD)	1.7 (0.7)	1.9 (0.5)	1.7 (0.7)	0.24 (-0.16,0.64), p=0.24	0.05 (0.44,0.53), p=0.85
2. Contemplation, mean(SD)	4.3 (0.6)	4.1 (0.6)	4.0 (1.2)	-0.37 (-1.04,0.31), p=0.28	-0.27 (-0.86,0.32), p=0.34
3. Preparation, mean(SD)*	4.0 (0.6)	3.6 (0.9)	4.0 (0.8)	**-0.6 (-1.16,-0.04), p=0.04**	-0.11 (-0.68,0.46), p=0.69
4. Action, mean(SD)*	3.4 (1.0)	4.1 (0.7)	3.4 (1.4)	**0.73 (0.28,1.17), p=0.01**	0.17 (-0.37,0.71), p=0.52
5. Maintenance, mean(SD)*	3.1 (1.1)	3.8 (0.9)	3.2 (1.4)	**0.7 (0.16,1.23), p=0.01**	0.14 (-0.59,0.87), p=0.70
Overall Stage of Change (1-5)	3.3 (1.4)	4.3 (1.0)	3.4 (1.2)	**0.93 (0.3,1.57), p=0.01**	0.22 (-0.38,0.82), p=0.45

Based on Stages of Change continuous measure (Cancer Prevention Research Center, 2007). Comparisons were conducted among (n=18) patients who had non-missing post- and/or follow-up session data. Response scale options 1-5: 1 strongly disagree - 5 strongly agree , p<0.05.

Table 3: Survey Results: Change in Barriers to Physical Activity

Description	Pre- (n=18)	Post- (n=15)	Follow-up (n=14)	Pre- vs. Post-Difference	Pre- vs. Follow-up Difference
Any logical barrier (%)	72.2	46.7	71.4	**0.35 (0.13,0.94), p=0.038**	0.99 (0.35,2.78), p=0.981
Any knowledge barrier (%)	33.3	13.3	21.4	0.29 (0.04,2.32), p=0.231	0.59 (0.16,2.14), p=0.405
Any physical barrier (%)	55.6	20	85.7	**0.18 (0.03,0.99), p=0.049**	**3.6 (1.08,12), p=0.038**
Any attitude barrier (%)	72.2	33.3	57.1	**0.18 (0.04,0.76), p=0.022**	0.48 (0.12,1.94), p=0.288

Based on International Physical Activity Questionnaire (IPAQ, 2002). Comparisons were conducted among (n=18) patients who had non-missing post- and/or follow-up session data. Estimates were odds ratios (OR<1 = "no"; OR>1 = "yes"), p<0.05.

Zumba

Walking/Running

Yoga

Discussion

- Our study suggest that culturally-tailored programs that leverage local community resources can reduce perceived barriers to physical activity, increase physical activity behaviors, and increase awareness of community resources for sustained exercise.
- Collectively, quantitative and qualitative results reinforce the value of utilizing theoretical frameworks to develop and evaluate diabetes interventions.

Strengths/Limitations

Strengths
- A range of physical activity types were included in the CFPP, as prior literature shows yield more significant changes in diabetes control than programs with similar exercises throughout.
- Participants reported increased affinity towards exercise types after the program compared to baseline.
- The CFPP was tailored to address a range of cultural and environmental barriers to physical activity among urban African-Americans with diabetes.

Limitations
- Measures of physical activity were based on self-report, which could have introduced response bias.
- Our program was not sufficiently powered to detect meaningful changes in clinical outcomes such as BMI or HbA1c.
- Sample consisted of low-income, urban African-Americans and may not be generalizable to the larger population of African-Americans in the U.S.

Implications

- This collaborative intervention supports the value of culturally-tailored programs that can increase access to, and awareness of, community-based exercise locations and resources, and ultimately improve health behaviors and disease management for minorities with diabetes.
- Interventions such as this can inform planning for future healthcare-community programs and health policy initiatives targeting population health management and healthcare payment reform.

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