

Dover Micro Open Street Events: Evaluation Results and Implications for Community-Based Physical Activity Programming

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Abstract

Open Streets events provide opportunities for residents to be active. The current program developed and implemented five smaller scale, Micro Open Streets Events (MOSE) in Dover, DE that provided a range of opportunities for physical activity over a <0.5 miles stretch of closed road. Our objective was to evaluate the capacity of this approach to reach residents and improve knowledge and intention to engage in physical activity once the event was over. We used individual surveys, observational, and neighborhood audit factors to assess MOSE participation and conduciveness to physical activity. Our results showed that MOSE attendance ranged from 40-500 adults from a high-risk demographic (i.e., non-Caucasian, middle-age, overweight), who demonstrated a strong liking of the MOSE and increased knowledge of, and intention to engage in physical activity following the event. Our data suggest that where a full-scale Open Streets event is not feasible, a MOSE may be a viable alternative.

Objective

The objective of the current study was to conduct a multi-level evaluation of the MOSE in order to describe individual-level characteristics of attendees, program-level characteristics of the MOSEs, and neighborhood-level characteristics of the area surrounding the MOSEs.

Methods

Intervention Approach

The MOSEs were conceptualized and implemented by a local Healthy Neighborhood Council, developed out of the state healthcare transformation plan, to bring together healthcare systems and multi-sector community partners to improve population health and priority health areas. The MOSEs as an intervention, aligned with Restoring Central Dover, a comprehensive Neighborhood Revitalization Plan led by the National Council on Agricultural Life and Labor Research Fund, Inc. (NCALL). The MOSEs were implemented by a multi-interest organizing committee that included representation from the city's Parks and Recreation staff, local Universities, the city's Children's Theater, community volunteers, a local college drug and alcohol prevention program, a local health system.

MOSEs were held monthly between June and November, 2018 (N=5); the July event was cancelled due to inclement weather and rescheduled to November. Each event was planned around, and anchored to, an existing community event and offered activities intended to provide attendees opportunities to engage in, and learn about, physical activity and healthy eating. To the greatest extent possible, activities were administered by community-based organizations so that attendees could have the chance to engage with groups that were already in their communities.

Evaluation Methods

A multi-level evaluation design that assessed individual, program, and neighborhood factors related to the MOSEs and the attendees was implemented.

Individual-Level Measures/Tools Used

Data collectors positioned at the 2-3 entry/exit points, asked every third adult leaving the event if they would complete a 33-item survey.

Program-Level Measures/Tools Used

MOSE check-in sheets were used to estimate event attendance. Event activities and participation were assessed using Ecological Momentary Assessment (EMA). At the start of each MOSE and during the last 15 min of each hour, a data collector data collector transversed the length of the event and recorded the number of attendees at each activity.

Neighborhood-Level Measures/Tools Used

During the hour prior to each MOSE, a data collector walked all routes (sidewalks and streets) within a 0.25 radius of the MOSE and used a standard audit to assess neighborhood-level characteristics associated with walking.

Analysis & Results

Attendee Demographics: Seventy-eight attendees completed a survey (64.9% response rates). Attendees were mostly female (68%), middle-aged (Mean age=41.5 years; SD=13.2), and African American (58%). A wide array of websites/applications were used with Facebook (83%), Instagram (33%), and YouTube (37%) being the top programs. In terms of health status, mean BMI was 28.4 (SD=6.3), and overall, 32.8% were overweight (BMI 25-29) and 34.5% were obese (BMI>30). Approximately one in four (23%) respondents stated their health was "fair" or "poor;" respondents reported poor mental or physical health on 2.7 to 4.3 days in the last month.

Table 1: Physical Activity Behavior and Environmental Factors Related to Physical Activity Behavior.

Current Physical Activity Participation [N(%)]	
Walked Outside in last 7 days	47(61.8)
Biked Outside in last 7 days	9 (11.8)
Ran/Jogged Outside in last 7 days	9 (11.8)
More Likely to be physically active in the next 7-days because of attending a MOSE [N, %]	
Strongly Agree	33(42.9)
Somewhat Agree	18(23.4)
Neither Agree/Disagree	21(27.3)
Somewhat Disagree	2(2.6)
Strongly Disagree	3 (3.9)
Learned about local recreational facilities at this MOSE [N, %]	
	37(49.3)
How often recreational facilities in local area used [N, %]	
Very often	17 (23.6)
Often	17 (23.6)
Sometimes	25 (34.7)
Never	13 (18.1)
Extent to which Open Streets events will increase use of local recreational facilities [N, %]	
Very Much	34(47.9)
Somewhat	31(43.7)
Not at All	6(8.5)

MOSE Experiences, Attendance, and Participation: Almost all attendees surveyed strongly liked the MOSE (82%), 41% attended a previous Open Street event/MOSE, and 80% planned to attend in the future. While at the MOSEs, walking was the most common physical activity reported (M=30.8minutes, SD=36.9).

Community Connectedness: Overall, the sample reported a strong sense of community connectedness with 60% having several people in their community they trusted to help solve their problems. Most (80-84%) said that interacting with community members increased their interest in the community, and that such interactions made them want to try new things. Overall, the attendees reported moderate (M=11.6;SD=3.7) levels of connectedness with their community.

Neighborhood-Level Characteristics: The areas around the MOSEs were generally aesthetically pleasing having trees and attractive buildings representing a mix of residential and commercial/retail space as well as community facilities (e.g., tennis courts). The overall impression was that they were inviting for all in terms of walkability. However, some measures to safeguard pedestrian safety (e.g., presence of crossing signals) were lacking.

Program Level Characteristics: Data from the event logs showed that between 50-500 adult attendees registered for each MOSE. Event two, that occurred in August and coincided with the distribution of back to school supplies, was the most widely attended (N=500).

Table 2: MOSE Activity Classifications and Number of Attendees at Each Activity.

Activity Classification	Activity	*# Attendees Observed at MOSE Activities			
		1 st MOSE	2 nd MOSE	3 rd MOSE	4 th MOSE
Physical Activity Opportunity	Bike Rodeo	0	X	0	X
	Fun Stations (e.g., bean bag toss, net)	5	51	10	X
	Stage (Zumba, jazzercise, boot camp)	16	X	13	X
	Jump rope	9	X	X	X
	Police – youth football/basketball	25	X	X	X
	National Guard – football throw	X	22	X	X
	Dover Parks and Recreation	X	24	X	X
	Delaware Department of Transportation	4	29	X	X
	Bounce Castle	3	X	15	X
	Laser tag	X	X	20	X
Food/diet Opportunity	Kayaking	X	X	X	20
	5 K walk/run	X	X	X	30
	Fresh Market food stand	7	X	X	X
Food/diet education	Food truck (free)	8	29	X	X
	Food station (free)	23	92	10	X
	Your Community Garden	X	0	X	X
Physical activity education	Food Bank of Delaware	X	10	X	X
	University Agricultural Education display	X	X	14	X
Other	None offered				
	Delaware Quit Line (smoking cessation)	6	X	X	X
	Dover Public Library	X	14	X	X
	Buffalo Soldiers Motor Club	X	16	X	X
	Capital School District	X	16	X	X
	Delaware Public Health & Social Services	X	23	X	X
	Face painting	X	36	X	X

Conclusions/Recommendations

In conclusion, this study provides a positive signal for a MOSE as an alternative when a full-scale Open Streets event is not feasible. They reach individuals considered high-risk for poor health outcomes (e.g., cardiometabolic syndrome), are well received by attendees, and increase awareness of venues for physical activity in the local community which could translate to longer-term, positive changes in physical activity behavior.

Future evaluations of MOSEs should examine participation in healthy lifestyle behaviors such as physical activity following the event, and conduct a multi-level examination of demographic, health status, and neighborhood factors that may affect the likelihood of engaging in such behaviors following a MOSE.

Also important would be to consider how to further build on the community connections between MOSE activities and established community resources for healthy lifestyle behaviors so that there can be greater continuity from the single (or even repeated) MOSE with the established community resources.

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Introduction

Consistent with national rates (1), up to half of adults in the state of Delaware are inactive and fail to meet physical activity guidelines (2). Creating or enhancing knowledge about, and access to, safe places for physical activity is part of the national agenda to address insufficient activity (1). Open Streets events that temporarily close street sections to motorized traffic, and provide attendees access to various types of activity opportunities (3), have emerged in response to this national agenda. Evidence suggests that return Open Streets attendees are more active, and that while at the event, the majority engage in 30-150 minutes of activity (4).

Although there is much evidence to support the positive effects of Open Streets events (5), it is noteworthy that the majority of events are held in large urban centers, and involve the closing of tens of miles of highway (e.g., 4). Moreover, the sustainability of physical activity engagement following the events is not clear. Given evidence to show the importance of social and environmental level factors with physical activity (6, 7), assessment of such factors (i.e., social connectedness, walkability) might be important to informing approaches to sustaining physical activity engagement after the Open Streets event is over.

To expand on the evidence-base in support of the Open Street initiatives, a local multi-interest organizing committee was formed to develop, implement, and evaluate five "Micro" Open Streets events between June and December 2018 in the small city of Dover (37,109 residents) (US Census). These events were considered "Micro" because unlike other published accounts of Open Streets events that involved closing approximately 70 miles of highways for recreation (8), the current "Micro" events closed 2-4 blocks (i.e., 0.2-0.4 miles). In this report, we detail our Micro Open Street Event (MOSE) program objectives, intervention components, evaluation plan and results, as well as the implications of our findings for the public health field.