

1 **How Effective are Community Pedestrian Safety Training Workshops? Preliminary**
2 **Findings from a Program in California**

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1 INTRODUCTION

2 Developing pedestrian and bicycle plans, building supportive infrastructure and implementing
3 program initiatives to address pedestrian and bicycle safety requires data, skills and resources
4 that many jurisdictions do not have. The Community Pedestrian and Bicycle Safety Training
5 (CPBST) program was developed to provide communities with data, skills and informational
6 resources needed to plan, finance and implement pedestrian and bicycle safety initiatives,
7 specifically targeting historically underserved communities. CPBST facilitators provide
8 community-tailored workshops to community residents and stakeholders. The program goal is to
9 build communities' capacity to address local pedestrian and bicycle safety issues in underserved
10 communities across California, using a "6 Es" approach to safety (equity/empowerment,
11 evaluation, engineering, enforcement, education, and encouragement). While many places in the
12 US have programs similar to the CPBST, there is a lack of research on and evaluation of how
13 effective these programs are. The purpose of this study is to assess the effectiveness of the
14 CPBST program based on a process and outcome evaluation.

15 CPBST program elements, like collaborative brainstorming and a walking safety audit,
16 were initially derived from principles of Community-Based Participatory Research (CBPR) (1).
17 The focus of CPBST workshops is determined by the community, and workshops throughout the
18 years have included collaborative exercises with public officials, community members, and other
19 partners (2). In many ways, the program is aligned with standard public health frameworks that
20 explain how interventions can produce behavioral change, such as social ecological models and
21 the Stage of Change Theory (3-5). While evaluation of community pedestrian safety programs is
22 rare, there is some evidence that programs can help reduce pedestrian crashes, improve driver
23 compliance with pedestrian laws, and build community and public partnerships (6-8). Table 1
24 lists process and outcomes being evaluated in this research.

1 **TABLE 1 Process and Outcome Evaluation Objectives**

Process Objectives	Outcome Objectives
Goal 1: Provide communities with the relevant information, data and resources to identify and address local pedestrian and bicycle safety issues	
<p>PI.1: At each workshop, participants receive community-specific information and resources to address safety issues</p> <p>PI.2: At each workshop, facilitators and participants identify local pedestrian and bicycle safety issues</p>	<p>O1.1: After completing the workshop and upon follow-up, participants report an increase in their ability to identify unsafe walking and bicycling conditions</p> <p>O1.2: After completing the workshop and upon follow-up, participants report an increase in their ability speak up for improvements in their community</p>
Goal 2: Build coalitions between a representative cross-section of community stakeholders to address pedestrian and bicycle safety issues	
<p>P2.1: Each workshop planning committee has representatives from a cross-section of community stakeholders</p> <p>P2.2: The planning committee conducts outreach about the workshop to a representative cross-section of community groups</p> <p>P2.3: Outreach is conducted in languages and on platforms that target a representative cross-section of community stakeholders and members</p> <p>P2.4: Barriers to participation in the workshops are lowered</p> <p>P2.5: Representatives from a cross-section of community groups attend the workshop</p> <p>P2.6: During the breakout sessions, walking audit and planning sessions, participants representing different community stakeholders discuss safety issues and solutions with one another</p> <p>P2.7: At the end of each workshop, participants make plans to meet again to discuss safety issues</p>	<p>O2.1: Upon follow-up, community stakeholders report partnering with one another to address local pedestrian/bicycle safety issues</p>
Goal 3: Increase walking and bicycling in participating communities	
<p>P3.1: At each workshop, facilitators and participants identify barriers to walking and bicycling in the community</p>	<p>O3.1: Upon follow-up, participants report reduced barriers to walking</p> <p>O3.2: Upon follow-up, participants report increases in the number of days they have walked</p>

<p>P3.2: At each workshop, facilitators and participants develop potential solutions to barriers limiting walking and bicycling</p> <p>P3.3: Upon follow-up, community partners have applied for funding for solutions to barriers limiting walking and bicycling</p> <p>P3.4: Upon follow-up, community partners have implemented solutions to barriers limiting walking and bicycling</p>	
<p>Goal 4: Improve perceptions of pedestrian safety in and among workshop participants</p>	
<p>P4.1: At each workshop, participants identify local pedestrian and bicycle safety issues</p> <p>P4.2: At each workshop, facilitators inform participants about local safety issues and best practices to addressing issues</p>	<p>O4.1: After completing the workshop and upon follow-up, participants report improved perceptions of safety</p>
<p>Goal 5: Increase safety countermeasures in participating communities, including infrastructure, policy, programs, events and campaigns that aim to improve pedestrian and bicycle safety</p>	
<p>P5.1: At each workshop, facilitators and participants identify local pedestrian and bicycle safety issues</p> <p>P5.2: At each workshop, facilitators and participants work to develop solutions to local pedestrian and bicycle safety issues</p> <p>P5.3: Upon long-term follow-up, community partners have applied for funding to implement solutions to safety issues</p>	<p>O5.1: Upon long-term follow-up, at least one safety countermeasure was implemented in the community after the workshop</p>

1 *Note: Bolded items represent outcomes measured in this study*

2 **METHODOLOGY**

3 Twenty communities in California were selected to host CPBST workshops between April and
 4 September 2017; we evaluated fourteen sites, stratified by geography and urban character. The
 5 evaluation consisted of two research activities: surveys distributed to workshop participants to
 6 measure change in perceptions of pedestrian safety, and participant-observation of the workshop
 7 activities to gather data about process and collaboration.

8 Surveys were distributed to all workshop participants prior to and after each workshop.
 9 The pre-workshop survey asked participants to rate their perceptions of walking and pedestrian
 10 safety in the city or neighborhood where the workshop was held, barriers to walking, their usual
 11 travel patterns, and demographic and other personal characteristics. The post-workshop survey
 12 contained identical questions about walking perceptions and barriers, and was meant to measure
 13 how the workshop activities changed perceptions of and barriers to walking. We analyzed survey
 14 responses using basic statistical tests of comparison, including paired Wilcoxon signed-rank tests
 15 to measure the strength of the change in the Likert-type question responses and chi-square tests
 16 of proportions to measure general differences in agreement to the pre-workshop and post-
 17 workshop questions.

1 Members of the research team were participant-observers in each workshop. They took
2 notes on the groups and organizations the workshop participants represented, the topics that were
3 discussed in each workshop, how attendees participated, and how different groups worked
4 together during the activities. Researchers followed a standard protocol to ensure consistency in
5 the items observed and recorded. The first cycle of analysis consisted primarily of descriptive
6 coding using a pre-generated codebook, after which we developed themes or categories based on
7 common codes across the workshops. Both research team members participated in the first
8 workshop to develop consistent observation procedures and to revise the common protocol for
9 observing and coding. A single research team member attended subsequent workshops and
10 coded his or her observations, then discussed the analysis with the larger research team.

11 **FINDINGS**

12 **Survey results**

13 We received 190 responses to the pre-workshop survey and 135 responses to the post-workshop
14 survey from the 14 workshops. Of the total surveys, 121 were matched pairs, yielding a
15 37 percent response rate. Characteristics of workshop attendees are in Table 2.

16 Even though few workshop participants walked as their main mode of transportation, 92
17 percent of people walked for at least ten minutes in the previous week, and 34 percent had
18 walked every day. On average, people walked about four days per week, though there was
19 substantial variation in the average. Because many workshops had more regional involvement,
20 most participants were not residents of the place where the workshops were held and they did
21 most of their walking elsewhere: people walked only two days in town. Nevertheless, 81 percent
22 of respondents could assess their overall perception of pedestrian safety in the workshop
23 community. Of those who responded ($n = 153$), the median response was that people felt that
24 walking in workshop community was neither safe nor dangerous, and 38 percent reported feeling
25 “Somewhat safe” or “Very safe.” About one third thought it was somewhat dangerous to walk,
26 while 11 percent believed it was very dangerous to walk in the workshop community.

27 The survey included 14 questions about elements of pedestrian safety in the workshop
28 communities (Figure 1). After the workshop, people more strongly agreed that neighborhood
29 group and community events made them feel safer while walking. More people reported that
30 learning about safety made them feel as if they could advocate for improvements in the
31 workshop community. Workshop participants also reported a decrease in their agreement that
32 sidewalks were in good condition in their community. These changes in perceptions were likely
33 to be significant because the workshops had a strong community focus and included a group
34 walk as part of the instructional activities, where participants could experience and visualize their
35 own role in promoting pedestrian safety and identifying safety issues.

36 The survey also asked respondents to assess how significantly 13 different barriers were
37 in limiting their walking in focus communities (Figure 2). Prior to the workshop, the most
38 significant barrier to walking was lack of street lighting, followed by car traffic, lack of
39 crosswalks, sidewalks in poor condition, and danger from crime. In aggregate, perceived barriers
40 to walking did not change much and were not statistically different after the workshop. However,
41 participants were slightly more likely to agree that lack of safe crossings was a barrier to walking
42 compared to their perception before the workshop. This may be because crosswalks and
43 pedestrian signals are a central focus of the engineering portion of the training presentation, and
44 participants often identify crossings as an area of concern during the walking audit.

45

1 **TABLE 2 Summary attributes of survey respondents**

Variable	Summary value
Race/ethnicity	
Hispanic/Latino	54%
White	27%
Black	4%
Asian	5%
Other	2%
Education	
High school or less	25%
Some college	18%
College degree	52%
Relationship to workshop community	
Live in town	48%
Work in local or state government	24%
Work in a local non-profit	31%
Work at a school	3%
Work in public safety	3%
Other characteristics	
Median income	\$50,000-\$74,999
Female	67%
Responses per workshop site	
Azusa	20 (14)
Blue Lake	5 (4)
Cudahy	20 (9)
East Bakersfield	19 (16)
Florence-Firestone	23 (11)
Fresno	19 (8)
Long Beach	10 (8)
North Shore	15 (10)
Oakland	14 (11)
Orange Cove	12 (5)
Palermo	14 (11)
Pomona	9 (4)
Sanger	7 (7)
San Gabriel	4 (4)

Note: Numbers in parentheses indicate number of matched-pair surveys (i.e. pre- and post-workshop surveys)

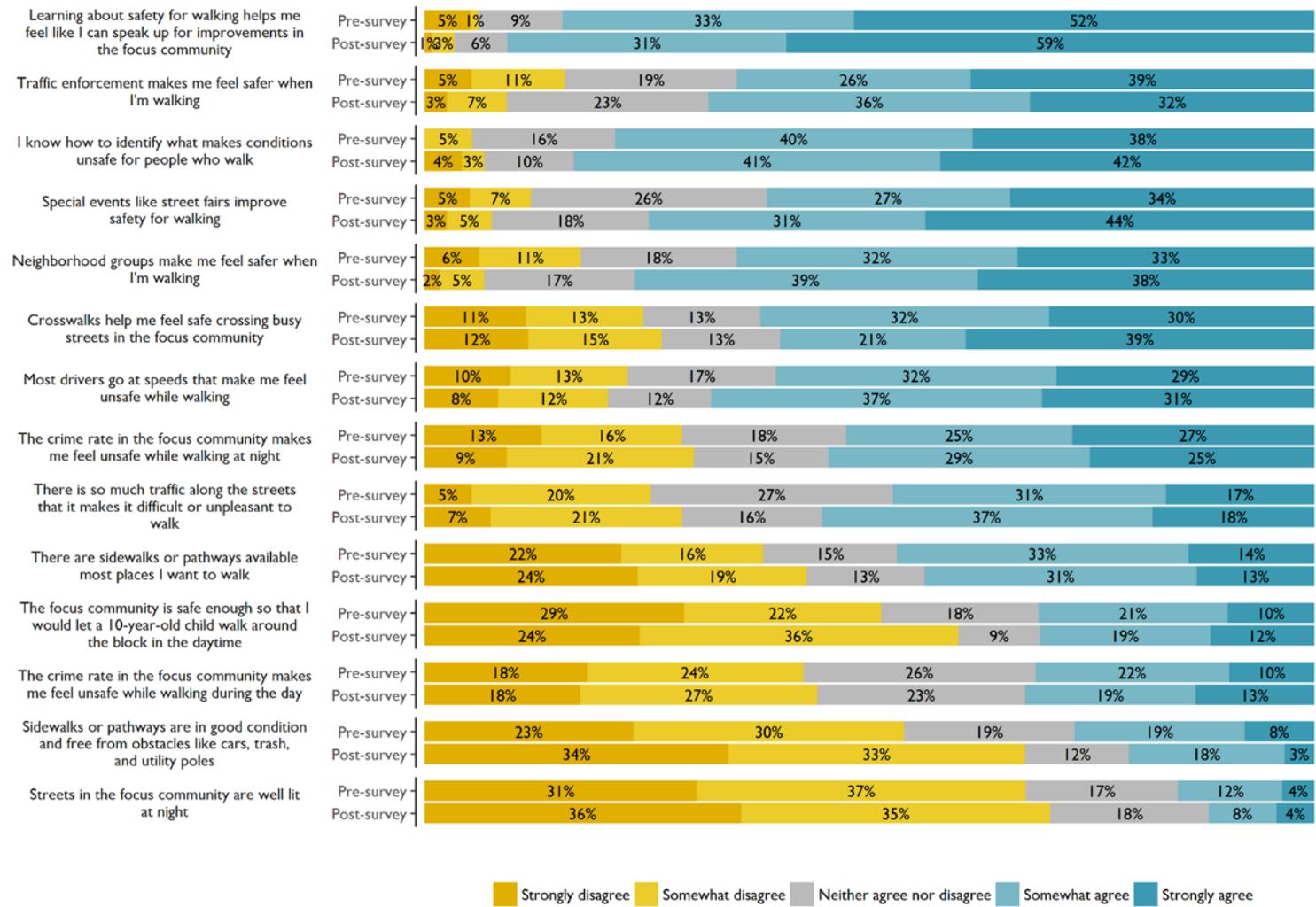


FIGURE 1 Walking experiences, pre- and post-workshop.

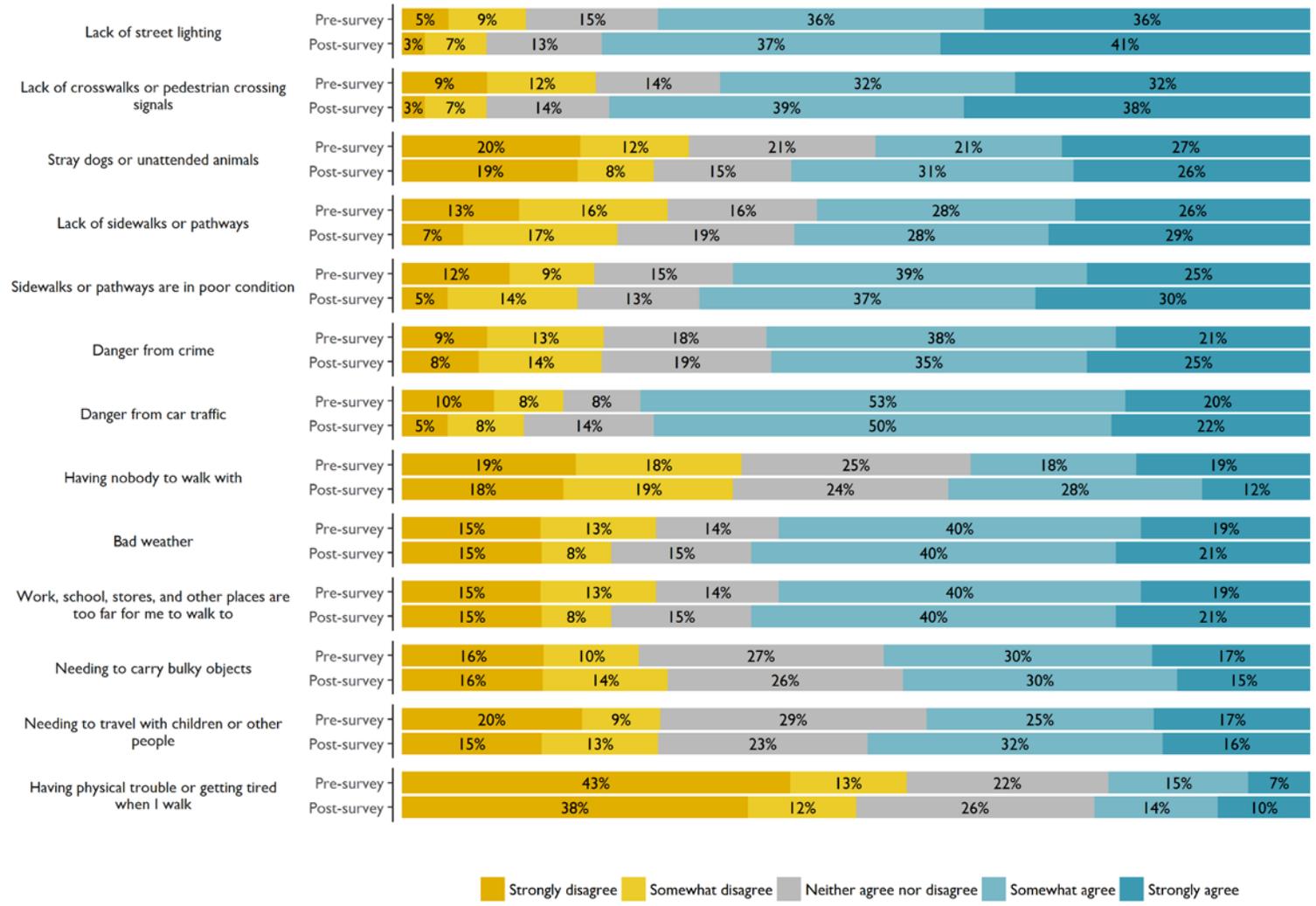


FIGURE 2 Barriers to walking, pre- and post-workshop

1 **Observations**

2 Three themes emerged from workshop observations. We found that the program provided a space
3 for a variety of community stakeholders to discuss pedestrian and bicycle safety issues and
4 countermeasures, brought new safety issues to light, and introduced participants to multiple ways
5 to address safety problems.

6 The CPBST workshops drew a cross section of stakeholders. Community residents, non-
7 profit leaders and employees, and public sector employees took part, though not equally so at all
8 workshops. Each workshop was the first time that representatives from different stakeholder
9 groups were in the same space for a significant amount of time together. Nevertheless,
10 participants mentioned that not all critical stakeholder representatives were present at each of the
11 workshops. Those missing were often groups whose primary responsibilities lay outside
12 pedestrian or bicycle safety, such as law enforcement, schools or the business community. In
13 some cases, the groups missing from the discussions had been invited to the workshop and had
14 not attended, while in a few cases the planning committee had not considered the missing
15 groups' involvement when conducting outreach to promote the event.

16 The workshops brought a number of pedestrian and bicycle safety issues to light for
17 participants through local examples in the presentation and through discussion during the
18 walking audit. Participants most commonly mentioned pedestrian and bicycle infrastructure
19 issues, which was consistent with survey results finding that the lack of infrastructure was one
20 the most commonly reported barriers to walking. In the rural community workshops, the most
21 common infrastructure-related concerns related to breaks in pedestrian and bicycle connectivity,
22 including non-existent sidewalks, missing paths for walking or cycling, poorly marked
23 crosswalks, and a lack of street lighting. Participants at the urban workshops focused primarily
24 on traffic control and pedestrian/bicycle visibility. Safety in school zones and along routes to
25 school were common concerns and priority areas in communities. The workshop facilitators
26 presented countermeasures for a majority of safety concerns that participants raised. However,
27 participants raised other barriers to walking and cycling safety that not covered formally in the
28 presentation, including high temperatures and rain, and loose dogs.

29 In most workshops, participants learned about improvements that they were not aware of
30 before the workshop. They were particularly interested in infrastructure projects and programs
31 that were community-led, easy, and inexpensive to implement. Most participants recommended
32 improvements to pedestrian infrastructure, including improving visibility of existing crosswalks
33 or installing sidewalks on streets that did not have them. Many of the potential solutions they
34 suggested involved maintenance of existing infrastructure. Most infrastructure projects suggested
35 were smaller in scale. Large-scale projects, like road diets or paving rural gravel roads, were
36 mentioned less frequently. It was also common for participants to suggest potential programs and
37 events that aimed to encourage walking and bicycling.

38 Participants at the workshops often cited funding and jurisdictional issues as the main
39 limitations to implementing safety countermeasures. Lack of funding for traffic enforcement,
40 infrastructure and programs were common issues. Participants often cited partnership
41 development between community groups, local businesses or government agencies as a solution
42 to address funding and jurisdictional challenges.

43 **CONCLUSION**

44 The challenge of measuring the outcomes of safety programs is well-documented, as is the
45 growing need to measure performance and promote data-driven programming. Our findings

1 begin to support the proposition that the CPBST workshop intervenes on multiple levels to
2 improve pedestrian safety and increase walking as described in program and outcome evaluation
3 goals. At sites where practitioners were the primary audience members, workshops provided the
4 catalyst for professionals to come together to strengthen ideas and enhance partnerships to
5 address local safety issues. Where residents were more involved, the workshop acted as both a
6 partnership and community-building exercise. In particular, when participants went out in groups
7 on the walking audit to identify safety issues, they were also enabled to identify and coalesce
8 around common safety improvement priorities. This helped people experience walking with the
9 support of a social group. The support that neighborhood or social groups provide might be
10 particularly important for underrepresented groups. For underserved communities, it might be
11 particularly important to focus on efforts to build social cohesion via walking/bicycling groups
12 concurrently with infrastructure improvements (9).

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