

Environmental Features of Shopping Malls and Other Public Spaces Used by Older Adults for Walking

Diane King¹, Peg Allen², Dina Jones³, David Marquez⁴, David Brown⁵, Dori Rosenberg⁶, Sarah Janicek⁷, Basia Belza⁸

¹University of Alaska Anchorage, ²Washington University in St. Louis, ³West Virginia University, ⁴University of Illinois at Chicago, ⁵Centers for Disease Control and Prevention, ⁶Group Health Research Institute, ⁷University of Illinois at Chicago, ⁸University of Washington, Seattle

Introduction

Shopping malls are recommended to older adults as places ideally suited for walking, HOWEVER, there is limited research on the environmental features that contribute to their walkability, or characteristics of the walkers themselves.

Methods



Our evaluation was guided by the RE-AIM (reach, effectiveness, adoption, implementation and maintenance) framework and ecological theory.

Site Selection Criteria:

- Shopping malls and other public spaces that seniors were using for walking,
- Located in Alaska, Illinois, Missouri, Washington, & West Virginia,
- Designated walking times established outside of regular business hours,
- Primary business purpose is NOT physical activity,
- Potential to reach geographically and racially diverse seniors.

Excluded: fitness facilities and tracks.

Measures

“Above all, do not lose your desire to walk: every day I walk myself into a state of well-being and walk away from every illness...”
Soren Kierkegaard, letter to Jette (1847)

Results

Observed Environmental Features from Mall Environmental Audit (subset of HAN walking audit)

Audit Domains	Environment Features	Audit Results		
		Malls (n=10)	Other Spaces (n=6)	p-value ^a
External Environment	Public Transit Stops	100%	67%	.12
	marked walkway to entrance	50%	17%	.86
	distance in feet to entry, average (SD)	220 (230)	303 (206)	.54
	Parking Available on Site	80%	83%	.64
	well lit	70%	67%	.64
	traffic control near walkways	40%	67%	.61
Internal General	Aesthetically pleasing	30%	67%	.30
	Physical disorder ^b	40%	0%	.23
	Wayfinding aids	80%	67%	.60
	benches	100%	83%	.38
	drinking fountains (working)	50%	83%	.31
Walking Environment	handrails on stairs	50%	50%	1.0
	Restrooms Available	100%	100%	1.0
	clearly marked	100%	67%	.12
	well lit	90%	67%	.52
	clean/maintained	90%	100%	1.0
	Physical Disorder ^c	30%	33%	1.0
	Doors unlocked during non-business hours for walkers	100%	50%	.04
	Designated Walking route	50%	83%	.31
	circuit	90%	80%	1.0
	trip/fall hazards	30%	50%	.61
lighting issues along route	50%	17%	.31	
Walking Environment	structured program ^d	40%	50%	1.0
	other walkers	90%	100%	1.0
	building security visible	70%	17%	.12
	welcoming	60%	67%	1.0
	no competing use	50%	50%	1.0

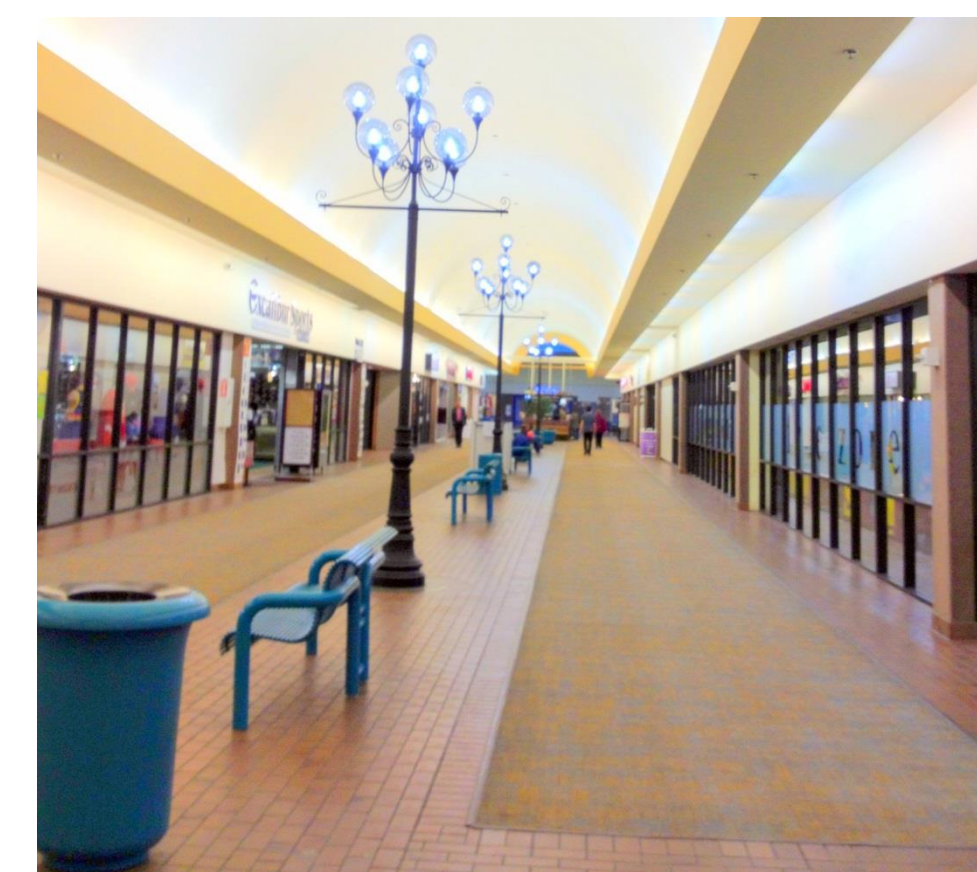
Note. ^aP-value from two-sided Fisher's Exact Test (some cells were too small for chi-square test) or t-test. ^bPhysical Disorder (external) defined as graffiti; abandoned cars; broken/boarded windows; drug paraphernalia; broken glass, liquor bottles/cans; litter on mall property or walkways. ^cPhysical Disorder (internal) defined as graffiti; stores shuttered; debris or overflowing trash cans. ^dStructured program defined as a formal walking program beyond unlocked doors before business hours; could include registration, progress tracking, motivational signage, exercise stations.

Walking sites:
N=16

All sites:
public transit stops;
accessible parking;
level flooring.

Most sites (≥80%):
Circuitous route;
benches on route;
well-maintained public restrooms

Sites varied:
hours of access,
programming,
parking lot traffic control, and lighting.



Walkers:

Mall Walkers (n=443); Other Spaces Walkers (n=87)
Walkers at malls were observed to be older ($p<.001$) & more racially diverse ($p=.003$) than at non-mall sites.

Conclusions

Despite diversity in location, size, and purpose, all of the audited sites shared numerous environmental features known to promote walking in older adults and few barriers to walking.

Future research should study the impact of community interventions to encourage use of malls and other public spaces for walking.

This information on this poster was supported by Cooperative Agreement Number U48-DP001911 and Special Interest Project (SIP) 13-070 from the Centers for Disease Control and Prevention (CDC). The findings and conclusions in this publication are those of the author(s) and do not necessarily represent The CDC's official position.

SOPARC WALKING ROUTE CODING FORM FOR MALLS AND OTHER INDOOR PUBLIC VENUES

Date: _____ Venue ID: _____ Observer ID: _____ Route Number: _____
Start Time: _____ End Time: _____

Age Group: Child = from infancy to 12 years of age; Teen = from 13 to 20 years of age; Adult = from 21 to 59 years of age; Senior = 60 years of age and older as seniors.
Ethnicity: White (W), Non-White (NW) [any person who appears Black, Hispanic, Asian, Alaska Native/American Indian, Other Racial or Ethnic group]
Activity Level: Sedentary (S) = lying down, sitting, or standing in place; Walking (W) = walking at a casual pace; Vigorous (V) = engaged in an activity more vigorous than an ordinary walk (e.g., increased breathing, sweating, pace is brisk or race walking; or walking with ankle or wrist weights)
Mobility aides: 1 = using an assistive device including a cane, walker, scooter, wheelchair (do NOT include trekking poles if no visible mobility impairment)

Person	Gender		Age Group				Ethnicity			Activity Level		Mobility Aid		NOTES
	Female	Male	Child	Teen	Adult	Senior	W	NW	S	W	V	Code		
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														

System for Observing Play and Recreation in Communities tool

CDC-Healthy Aging Research Network Environmental Audit

CDC-Healthy Aging Research Network Environmental Audit (cont'd)

WALKING ENVIRONMENT

56. Do you see the lock in doors during non-business hours for walkers? Yes No

57. If yes to previous question, please list times the site opens for walkers:

AM _____ circle days: _____
 PM _____ circle days: _____
 PM _____ circle days: _____
 PM _____ circle days: _____

58. Please list the site's business hours:

Weekdays: AM _____ to PM _____
 Saturdays: AM _____ to PM _____
 Sundays: AM _____ to PM _____

59. Is there a walking program beyond unlocked doors before business hours? Yes No
 material: _____ Yes No

60. Is there a walking program leader? Yes No
 Other: _____

61. If there is a walking program leader, please list name(s): _____

62. Walking program features. Check all that apply:

Wayfinding signs
 Motivational signage (e.g., walking distance posted)
 Signage in multiple languages
 Signage promoting the mall (e.g., slow motion loop signs, mall discounts on designated days, etc.)
 Designated route or accommodations for slow or fast walkers
 Program book or information table
 Other: _____

63. Please describe walking route features. If none, leave blank: _____

WALKING ROUTE

64. Is there a designated walking route? Yes No (skip to "Walking Conditions" section)

65. Type of route: Circuit Loop Trip and back Other: _____

66. Route length (feet): _____

67. Time it takes to walk one loop at 2.8 mph: _____
 Under 5 min 5-10 min 10-15 min Over 15 min

WALKING CONDITIONS

68. Walking route flooring material. Check all that apply:

Concrete Asphalt Tile/stone Carpet Wood Other: _____

69. Trip or fall hazards? (e.g., wet areas, changes in elevation, etc.) Yes No

70. Rate extent of poor maintenance of the worst section of the walking route: None A few (1-3) A lot (4 or more)

71. Note the number of areas where there is poor lighting along the walking route (e.g., lighting vision, orange, yellow, etc.): None A few (1-3) A lot (4 or more)

72. Check all that apply:

Sidewalks for canes
 Other: _____

73. Check all that apply:

Benches
 Drinking fountains
 Restrooms
 Handrails on stairs
 Clear paths during walking hours
 No competing use of walking route during peak hours
 Other: _____

74. NOTES: WALKING ENVIRONMENT