Physical Activity Interventions in Latin America

Expanding and Classifying the Evidence

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Appendix A

Description of the physical activity intervention categories based on the U.S. *Community Guide*[1,2] and Latin American literature review[3]

Intervention	Description
Informational	
Community-wide campaigns[2]	• These campaigns involve many community sectors in highly visible, broad-based, multicomponent approaches to increasing physical activity. Most campaigns also address cardiovascular disease risk factors other than inactivity. • Campaign messages are directed to large audiences through a variety of channels (e.g., TV, radio, newspapers). • The campaigns include such components as support and self-help groups; counseling on physical activity; risk-factor screening and education at work sites, schools, and community health fairs; community events; and creation of walking trails.
“Point-of-decision” prompts[2]	• Signs are placed next to elevators and escalators to motivate people to use nearby stairs for health benefits or weight loss. • All interventions are single-component, with placement of signs as the only activity.
Classroom-based health education focused on information provision[2]	• These programs consist of health education classes in elementary, middle, or high schools whose goal is to help students develop the skills they need to make rational decisions about adopting healthier behaviors. • Class content is usually multicomponent, with teachers educating students about aspects of physical inactivity, nutrition, smoking, alcohol, and drug misuse. • Behavioral skills components (e.g., role play, goal setting, contingency planning) can also be part of the classes. • Spending additional time in physical activity is not usually part of the curriculum.
Mass media campaigns[2]	• These are single-component campaigns that are designed to increase knowledge about physical activity, influence attitudes and beliefs, and change behavior by transmitting messages through newspaper, radio, TV, and billboards, singly or in combination. • Paid advertisements, donated time and space for promotions, and news or lifestyle features are used. • These interventions do not include other components such as support groups, risk-factor screening and education, or community events.
Delivery of short messages related to physical activity[3]	• These interventions involve short physical activity–related educational and motivational messages (about 5 minutes) delivered to a specific population on a routine basis. • Settings for this intervention included work sites, senior centers, and community centers. • They are distinct from the “mass media campaigns” interventions in that a health educator delivers the short messages verbally to a targeted population in a group setting.

Intervention	Description
Behavioral and social approaches	
Multicomponent instructional programs to promote physical activity[a]	• These interventions involve an individual or group instruction/training session with the goal of promoting physical activity. They also involve one or more of the following intervention components, including social interaction, information provision, or exercise sessions. • They could be carried out in worksites, communities, or home settings. • This represents a new category in which the following intervention categories from the U.S. *Community Guide* were merged because of too few Latin American studies within each of them and because their components overlapped: (1) individual-adapted health behavior change; (2) social support in community settings; and (3) physical activity classes (excluding those that involved enhanced access in community settings). Eventually, as more studies populate this category, the studies may be split back into multiple categories.
Health education with component for turning off TV/video games [2]	• These health education classes, based in elementary school classrooms, encourage students to spend less time watching TV and playing video games. • Students are taught techniques or strategies to help achieve these goals, such as limiting access to TV and video games. • All classes include a "TV turnoff challenge" encouraging students not to watch TV for a specified number of days. • Classes do not specifically encourage physical activity as an alternative to watching TV and playing video games. • Parental involvement is prominent, and all households are given monitors for automatically monitoring TV use.
College-age physical education/health education[2]	• This intervention uses didactic and behavioral education to increase and retain physical activity levels among college students and to help students develop lifelong exercise habits. • The physical education classes may or may not be offered by physical education or wellness departments at colleges and universities but must include supervised activity in the class. • Classes include both lectures and laboratory-type activities. • Students engage in supervised physical activity, develop goals and activity plans, and write term papers based on their experience. • Social support is also built into these programs.
Family-based social support[2]	• These interventions help families of those trying to increase physical activity (parents, siblings, or partners) to encourage this effort by modeling healthy behavior and by being supportive of exercise. • Intervention components, which may include goal setting, problem solving, contracts to exercise among family members, and other techniques for promoting physical activity, are often delivered in conjunction with other school-based activities, such as physical education or health education. • Family involvement may be promoted through take-home packets, reward systems, and family record-keeping. • Some programs also include family-oriented special events.
School-based physical education[2]	• These programs modify school-based physical education classes by increasing the amount of time students spend such classes, the amount of time they are active during the classes, or the amount of moderate or vigorous physical activity in which they engage during the classes. • Most increase the amount of physical activity during already scheduled classes by changing the activities taught or modifying the rules of the game so that students are more active. • Health education is often part of the program as well.

Intervention	Description
Physical activity classes in community settings[3]	• These interventions are regular, structured exercise group classes accessible in public spaces and available for free to residents living in diverse communities. In Latin America, one example of a program falling under this category is "Academia da Cidade," loosely translated as "city gyms." • They are different from the "multicomponent instructional interventions to promote physical activity" because they are promoted and offered to entire communities and often implemented as part of a policy/practice by local government entities or organizations. "Enhanced access" (i.e., no cost, more/better locations, more times) is a key distinction. Also, unlike with multicomponent instructional programs, study staff do not provide intensive individual follow-up nor lead formal group discussions about exercise barriers.
Environmental and policy approaches	
Creation of or enhanced access to places for physical activity combined with informational outreach activities[2]	• These multicomponent interventions involve the efforts of businesses, coalitions, agencies, and communities to create or provide access to places where people can be physically active. • Creating walking trails or providing access to fitness equipment in nearby fitness or community centers can increase opportunities for people to be more active. • In addition to promoting access, many include training people to use weights and aerobic fitness equipment; teaching about healthy behaviors; creating health and fitness programs and support or buddy systems; and providing seminars, counseling, risk screening, health forums and workshops, and referrals to physicians or additional services.
Community-scale urban design and land-use policies and practices to promote physical activity[2]	• These interventions commonly strive to create more-livable communities. • The interventions use policy instruments such as zoning regulations and building codes, and environmental changes brought about by governmental policies or builders' practices. The latter include policies encouraging transit-oriented development and policies addressing street layouts, the density of development, and the locating of more stores, jobs, and schools within walking distance of where people live.
Street-scale urban design and land-use policies and practices to increase physical activity[1]	• These interventions use policy instruments and practices to support physical activity in small geographic areas, generally limited to a few blocks. These policies and practices include features such as improved street lighting or infrastructure projects that increase the ease and safety of crossing streets, ensure the continuity of sidewalks, introduce or enhance traffic-calming such as center islands or raised crosswalks, or enhance the aesthetics of the street area, such as landscaping. • These interventions involve the efforts of urban planners, architects, engineers, developers, and public health professionals who were instrumental in creating or providing safer, more secure, and more enjoyable streets and sidewalks for walking and biking.
Transportation and travel policies and practices[1]	• Interventions to promote physical activity, including interventions that strive to improve access to walkways for pedestrians increase access to light rail and other forms of mass transit, increase the safety of pedestrians and cyclists, reduce the use of cars, and improve air quality. • The interventions use policy and environmental changes such as creating and/or enhancing bike lanes, requiring sidewalks, subsidizing transit passes, providing incentives for car/van pooling, increasing the cost of parking, and adding bicycle racks on buses.
Community-wide policies and planning[3]	• These interventions involve community-wide efforts to promote physical activity (all forms) through policy agendas, guidelines, incentives, policies that reduce environmental or institutional barriers to physical activity, and media campaigns. • They are comparable to the informational community-wide campaigns, in that they involve many community sectors in broad-based, multicomponent approaches to increase physical activity. The primary distinction, however, is that these interventions involve more than providing information to motivate people to change their behavior and to maintain that change over time; they require community-level policy changes. • Although these interventions may include aspects of the other environmental and policy interventions to increase physical activity, they are distinct in that they seek to increase all forms of physical activity and often consist of a combination of these strategies delivered to a broad population.

[a]Newly created intervention category following the updated Latin American literature review

References for Appendix A

1. Heath GW, Brownson RC, Kruger J, et al. The effectiveness of urban design and land use and transport policies and practices to increase physical activity: a systematic review. J Phys Act Health 2006;3:S55–S76.
2. Kahn E, Ramsey L, Brownson RC, et al. The effectiveness of interventions to increase physical activity: a systematic review. Am J Prev Med 2002;22:73–107.
3. Hoehner CM, Soares J, Parra Perez D, et al. Physical activity interventions in Latin America: a systematic review. Am J Prev Med 2008;34:224–33.

Appendix B

Differences in definitions of select external validity factors for programs, environmental change, and policy interventions

External validity factor	Programs	Environmental changes	Policies
Target population	Population for which the intervention is intended; it includes the source population of eligible participants for the intervention.	Population that will be affected by the environmental change, including the population living or working within a specific distance of the change. Distance will vary depending on how widespread the destination is, its importance to daily life, and location of the intended users.	Population that will be affected by the policy
Target settings	Settings (such as worksites, schools, or communities) that agree to deliver the program	Organizations or governing bodies making decisions with regard to the selection for the setting and design of the change; examples include policymakers, planners, traffic engineers, law enforcement personnel, residents, and property owners.	Organizations or governing bodyies responsible for passing, or adopting, the policy; examples include federal, state, or local policymakers or organizational leaders (e.g., at worksites, schools)
Delivery agents	Staff responsible for implementing the program	Organizations, agencies, or individuals responsible for implementing the environmental change	Organizations, agencies, or individuals responsible for implementing (applying, enforcing, and ensuring compliance of) the policy
Consistent implementation	Extent to which a program is implemented as intended, including consistency of delivery by staff, frequency or duration of activities, or content of activities	Extent to which a physical project/facility is implemented as planned or complies with established design principles or guidelines; it also refers to information about whether resources are approved to support implementation.	Refers to implementing the policy as planned, adequately enforcing it, providing resources for enforcement, or ensuring ongoing and consistent compliance with the core components of the policy; implementation consists of multiple acts that must be repeated over time to enforce or comply with the policy.
Costs	Amount and sources of funding (e.g., grants, tax revenue, donors) secured to implement the program (e.g., acquisition of intervention materials, payment of staff hours)	Amount and sources of funding (e.g., grants, tax revenue, donors) secured to implement the environmental change	Amount and sources of funding for policy implementation and enforcement
Institutionalization	Extent to which the program becomes part of the routine of the organization (i.e., the degree to which the program is sustained over time within the organizations delivering it; for existing programs, it refers to whether information is provided about how long the intervention has been in place prior to evaluation.	Plans for necessary upkeep and necessary support of the environmental change, as well as budget and staff to ensure that space is maintained; for evaluation of existing changes, it refers to whether information is provided about how long the built environment features(s) were in place prior to evaluation.	Continued enforcement of the policy over time; for evaluation of existing policy, it refers to whether information is provided about how long the policy was in place prior to evaluation.

Appendix C

Characteristics of studies included in the original[3] and current systematic review

Characteristic	Original review (Years 1980–2006)		Updated review (Years 2006–2010)	
	n	%	*n*	%
Total	18		13	
Country				
Brazil	8	44	13	100
Chile	3	17	0	0
Colombia	2	11	0	0
U.S.–Mexico Border	5	28	0	0
Setting				
School	8	44	3	23
Community	5	28	6	46
Work site	2	11	2	15
Church	1	6	0	0
Senior center	1	6	0	0
Healthcare facility	0	0	1	8
Multiple	1	6	0	0
Home or family	0	0	1	8
Study design				
Cross-sectional	1	6	1	8
Retrospective cross-sectional	0	0	3	23
Pre–post design (without control group)	5	28	5	39
Pre–post design (with control group)	2	11	3	23
Group nonrandomized design	5	28	0	0
Group randomized design	5	28	1	8

Appendix D

Reporting of external validity elements (*n*=19 studies)

Reported element	Yes		No		N/A	
	n	%	*n*	%	*n*	%
Reach						
Target population acknowledged/stated	18	95	1	5	–	
Recruitment of target population	11	58	8	42	–	
Participation rate—target population	13	93	1	7	5	–
Representativeness (comparison of participating versus nonparticipating individuals or versus target population)	1	8	12	92	6	–
Adoption						
Setting acknowledged/stated for adoption	17	89	2	11	–	
Recruitment of target settings	5	26	14	74	–	
Participation rate—setting	1	6	15	94	3	–
Representativeness (description of settings that were included, excluded or declined to participate)	0	0	16	100	3	–
Event, policy, or person that facilitated intervention adoption	6	32	13	68	–	
Implementation						
Description of intervention components	19	100	–		–	
Frequency of exposure to intervention	16	84	3	16	–	
Delivery agents acknowledged/stated	13	68	6	32	–	
Selection of delivery agents	2	13	14	87	3	–
Participation rate—delivery agents	1	6	16	94	2	–
Delivery agents required background/experience	1	5	18	95	–	
Training required to deliver intervention	7	37	12	63	–	
Payment of delivery agents	2	11	16	89	1	–
Intervention adaptation	4	21	15	79	–	
Level and quality of implementation of intervention components	2	11	17	89	–	
Quality or consistency of implementation by settings/delivery agents	3	17	15	83	1	–
Mediating variables	5	26	14	74	–	
Political, economic, and/or social forces facilitating intervention	4	21	15	79	–	
Barriers or challenges	6	32	13	68	–	
Outcomes for decision-making						
Outcomes comparable to clinical guidelines or public health goals	13	68	6	32	–	
Quality of life	2	11	17	89	–	
Additional benefits beyond physical activity or physical health	6	32	13	68	–	
Negative (unintended) consequences	1	5	18	95	–	
Effect moderator(s)	6	32	13	68	–	
Sensitivity analyses to assess dose–response	3	16	16	84	–	
Total costs of intervention	3	16	16	84	–	
Costs itemized by intervention components	1	5	18	95	–	–
Cost-effectiveness or cost-benefit analysis	0	0	19	100	–	–
Funding sources	8	42	11	58	–	
Maintenance and institutionalization						
Long-term effects	3	16	16	84	–	
Sustainability of intervention	7	37	12	63	–	
Replication or institutionalization of intervention	4	21	15	79	–	
Attrition by condition or population subgroup	3	16	16	84	–	
Drop-out representativeness	5	28	13	72	1	–
Acceptability of intervention	8	42	11	58	–	