

Connecting Active Living Research and Public Policy: Transdisciplinary Research and Policy Interventions to Increase Physical Activity

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ABSTRACT

National and international organizations recommend creation of environments that support physical activity where people live, work, play, study, and travel. Policy changes can lead to activity-supportive environments and incentives. Research on environmental and policy influences on physical activity is well underway in many countries. An important use of the research is to inform policy debates, but the “translation” of research to policy is an emerging science. The papers in this supplement were presented at the 2008 Active Living Research Conference whose theme was “Connecting Active Living Research to Policy Solutions.” The papers include evaluations of policy initiatives and research that suggests promising new policies. Commentaries propose principles for improving the translation of research to policy. Improving the rigor of research, asking policy-relevant questions, presenting country-specific data, and effectively communicating findings to policy makers are likely to contribute to greater impact of research on policy processes.

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INTRODUCTION

The World Health Organization (WHO) estimates that 2 million deaths per year can be attributed to physical inactivity (1), making physical inactivity one of the leading global health challenges.

According to the Oxford Health Alliance, physical inactivity is a risk factor for three of the four leading chronic diseases (cardiovascular diseases, type 2 diabetes, some cancers, but not lung disease) that collectively account for more than 50% of all deaths worldwide (2). The global obesity epidemic that is seen in countries at all levels of development (3) has brought heightened attention to physical activity, because, in combination with reduced energy intake, increased physical activity must be a part of the solution to obesity.

There is widespread recognition that increasing physical activity in entire populations will require more than educating individuals. Recommendations from the WHO (4), International Obesity Task Force (5), US Surgeon General (6), and US Institute of Medicine (7) all emphasize the essential role of policy and environmental changes in controlling obesity. Transportation policies that heavily favor automobile travel over walking and cycling (8), policies that encourage separation of land uses so people cannot walk to common destinations (9), failure to ensure that parks are available in every neighborhood (10), and school policies that do not prioritize physical activity promotion (11) are all believed to contribute to inadequate levels of physical activity in many countries.

Public policy is traditionally defined as “what government ought or ought not to do and does or does not do” (12). Recent policy analysis models now recognize the critical role that corporate leaders, school officials, foundations, and non-governmental organizations play in setting and advocating the policy agenda, and in some cases leading policy change (13). Policies can create incentives for physical activity or inactivity, support programs or not, and shape built environments where physical activity can take place (14). Physical activity proponents are working to change policies in all regions of the world (15), and research is one of the classic tools of policy change. Research can provide evidence of the potential impact of policy changes and can evaluate the actual effects of those changes.

Researchers and policy makers live in “parallel universes,” so there are many challenges and few incentives for crossing these institutional boundaries in using research to guide policy (16). One of the challenges for researchers is to understand the diversity of policy processes (e.g., federal, state, or local governments), the special rules of each, and when and how to intervene strategically. As confirmed

by commentators to this special issue, academic research is difficult for policy makers to translate and coordinate with the policy process. The two groups rarely communicate directly and there are few rewards on either side for using research to guide policy decisions. There is increasing interest in “translating” research to policy in public health and in the physical activity field in particular (17).

ACTIVE LIVING RESEARCH: A GOAL OF USING RESEARCH TO INFORM POLICY

Active Living Research (ALR) is a national program of the Robert Wood Johnson Foundation. Begun in 2001 with a mission of investigating policies and environments to support active communities, the revised mission from 2007 to 2012 is to stimulate and support research on environments and policies that influence physical activity to inform effective childhood obesity prevention strategies, particularly in low-income and racial/ethnic communities at highest risk. The history, methods, and outcomes of ALR are described in detail elsewhere (18), and Brown and Kraft (19) have written an accessible overview of the field. Active living is a way of life that integrates physical activity into daily routines for recreation, transportation, and other purposes.

The first goal of ALR is to build an evidence base on the environmental and policy factors that are related to physical activity. Although ALR funding is limited to US-based investigators, the broader research field is international in scope. ALR includes international studies in conferences, journal supplements, and literature searches. The second goal of ALR is to build a transdisciplinary field and diverse network of investigators. Transdisciplinary work is defined by combining concepts, methods, and results from multiple fields to create new approaches and findings that would be impossible working within one field. Some of the disciplines mostly involved in this work include public health, behavioral and social sciences, city planning, transportation, recreation and leisure studies, policy science, economics, law, geography, architecture, and landscape architecture (17).

The third goal of ALR is to use research to inform policy. The theme of the Fifth ALR Annual Conference was “Connecting Active Living Research to Policy Solutions.” The Conference was

held on 9–12 April 2008 in Washington, DC, and the program was designed to maximize opportunities for bridging the gap between research and policy. The Conference featured keynote lectures from two US Congressmen; a panel on physical activity policy initiatives at the local, state, and federal levels; a panel on school policy opportunities; interactive sessions with policy advocacy groups; and an interactive presentation on communicating findings to the news media. ALR presented the first “Translating Research to Policy Award” at the Conference. Abstracts and slides from oral presentations are available online (20).

OVERVIEW OF THIS SUPPLEMENT TO THE *JOURNAL*
OF PUBLIC HEALTH POLICY

Most of the papers published in this theme supplement to the *Journal of Public Health Policy* were selected from the best abstracts submitted to the 2008 Active Living Research Conference and were presented at the Conference. There was a strong competition for presentations, with 149 abstracts submitted and only 99 selected on the basis of blind review. The conference was attended by about 325 professionals (compared to 138 in the first year). The program committee was charged with ensuring a transdisciplinary approach to the meeting, so we thank this diverse group for their many thoughtful contributions: Leon Andrews, Myron Floyd, B. Michelle Harris, Sarah Lee, Robin McKinnon, Chinwe Onyekere, Joseph Schilling (Program Chair), and James Sallis.

The ALR staff, program committee, and guest co-editors are pleased to collaborate with the *Journal of Public Health Policy* to publish the best papers from the Conference. We hope that the large international readership of the *Journal* will gain a greater appreciation for environmental and policy studies on physical activity and their relevance for health promotion and policy worldwide. All the papers in this special issue will have open access at www.activelivingresearch.org, as do papers from all ALR-sponsored journals, enhancing the reach of the Conference and resulting publications.

Each of the papers reflects the diversity of the US policy-making process with examples from the national/federal government, state governments, and local governments. Within America’s strong federalist system, active living’s strongest policy connections rest in

the domain of state and local policy, because governments at these levels have primary responsibility for managing regional and local transportation systems, parks and recreation programs, schools, and land use planning.

ALR is pleased to announce the winner of the first “Translating Research to Policy” award. The team of James Raczynski, Joseph Thompson, and Herschel Cleveland used research and evaluation results to shape the design of a childhood obesity prevention law in Arkansas and to support the continuation of that law when it was threatened. There are several lessons from this experience that may be useful for others, and the highlights are presented briefly in the award announcement (21) and in more depth in a full-length paper (22) that was invited by the co-editors.

The 13 research papers are divided into three broad categories: transportation, schools and youth, and built and social environments. In the first category, the papers by Cradock *et al.* (23) and Lachapelle and Frank (24) evaluated policy interventions related to the US federal transportation funding and employer transit incentives, respectively. The Dill (25) study evaluated what kinds of roads cyclists used, and the Nicoll and Zimring (26) paper evaluated a building design innovation designed to stimulate stair use.

Four of the six papers in the schools and youth section directly evaluated school policies. Raczynski *et al.* (22) evaluated the first comprehensive statewide childhood obesity prevention legislation in the United States, and Kelder *et al.* (27) evaluated a Texas law designed to improve school physical education. Belansky *et al.* (28) evaluated federally mandated school wellness policies, and Dodson *et al.* (29) used qualitative methods to identify enablers and barriers to passing childhood obesity legislation in multiple states in the United States. Several of these studies highlighted the gap between policy adoption and implementation. Both Zhu and Lee (30) and Babey *et al.* (31) examined a wide range of correlates of active commuting to school that may have implications for policies within the education, transportation, and planning sectors.

In the built and social environments category, Cohen *et al.* (32) contributed a surprising evaluation of the impact of urban park renovations that broadens our attention from the built environment to social and policy environments when evaluating the impact of environmental changes. Neckerman *et al.* (33) documented

disparities across neighborhoods in environmental variables thought to be related to physical activity. Roman *et al.* (34) examined environmental factors related to fear of being active outdoors. These studies can contribute to identifying policy solutions targeted to helping people in disadvantaged neighborhoods obtain adequate physical activity.

The review paper by Whitt-Glover *et al.* (35) was commissioned by ALR to compile the available evidence on disparities in physical activity and sedentary behavior among US children and adolescents. They re-analyzed objective accelerometer data from the National Health and Nutrition Examination Survey to compare physical activity and sedentary time across subgroups defined by sex, age, race/ethnicity, and weight status. They also examined psychological, social, and environmental correlates of physical activity in subgroups. Their findings identify areas in need of further research, and have implications for targeting interventions.

We are pleased to include four commentaries from leading professionals with expertise in the use of research to influence policy. Each writer was asked to provide guidance based on his experience. Harold Goldstein (from the United States) (36), Philip Insall (from the United Kingdom) (37), Robert Garcia and Fenwick (from the United States) (38), and Rob Moodie (from Australia) (39) use stories and examples from their work to derive principles and advice for enhancing the translation of research to policy. Although there is substantial agreement across the commentaries, each approach is unique in recommending ways to advance the art of policy change and each highlights the importance of researchers and policy makers working together to generate more policy-relevant research.

Each paper was reviewed by journal editors, guest co-editors of this supplement, and multiple peer reviewers. The commentaries were reviewed by journal editors and guest co-editors. The guest co-editors thank the peer reviewers and express their deep appreciation to Amanda Wilson of ALR for managing the submission and review process.

POLICY AND ENVIRONMENTAL RESEARCH FROM
AN INTERNATIONAL PERSPECTIVE

Physical inactivity (4) and obesity (3,40) are global problems. Internationally, the essential effects of policy and the built environment

on obesity and physical activity are now well recognized (4,5,7). Following reviews of the evidence, leading international bodies in the United Kingdom (41–43), Canada (43), and Australia (44) have concurred with leading US bodies (6,7,9). Although the evidence base is still evolving, there is sufficient evidence to warrant public health action aimed at creating environments that support physical activity.

Nevertheless, there is a critical need for country-specific evidence to help shape local policy and practice. Fuelled by the injection of funding from organizations such as the Robert Wood Johnson Foundation (18), at this stage of development the active living field is dominated by US research (45–47). For example, the ALR database shows that of the 301 active living studies that have been abstracted and coded as of September 2008, almost two thirds ($n = 189$) were US studies, which far exceeds the next largest group of studies from Australia that represented only 10% of the published evidence ($n = 33$) (48). Nevertheless, the field is changing rapidly. In 2000, there were only eight studies that met the ALR criteria; in 2006, 92 were published. Moreover, the database shows that 29 countries have now published studies in the field including countries in transition such as China ($n = 4$), India ($n = 1$), Papua New Guinea ($n = 1$), and Cameroon ($n = 1$). The field is on an upward trajectory and will continue to expand. This will increasingly be true as more countries recognize the critical importance of the built environment for active living and invest in the field, thereby helping to produce the good quality evidence needed both to influence local policy and practice, and to evaluate environmental interventions.

Undoubtedly the United States is shaping the field, partly by developing methods for measuring the environment subjectively and objectively. These tools are being used globally to enable international comparisons. For example, in 2004 the International Physical Activity & Environment Network (49) was formed with the aim of facilitating international studies that enable pooled analysis from multiple countries. By using the same measurement tools, a major advantage of this initiative will be cross-country comparisons. Studies of environmental correlates of physical activity in any single country are likely to underestimate associations because environmental variation within a country is likely to be limited. The pooled analyses across countries should represent the full range of variation

in environments and physical activity. Moreover, analyses based on common methods are likely to assist in identifying variations between countries which, in turn, will help evolve both measurement of the environment and our understanding of environmental correlates and influences.

Despite the international field being in an embryonic stage, there is already consistent evidence across the globe showing that compact pedestrian-friendly walkable environments with access to destinations and public open space are associated with increased walking (50–56) and lower levels of obesity (57–64). The presence of cycling infrastructure increases cycling (65), and children are more likely to walk to school in pedestrian-friendly neighborhoods (66–70). However, important variations across countries will likely highlight the need for the collection of local evidence to help shape appropriate interventions. For example, in the Netherlands (71) and Australia (72), persons living in disadvantaged communities had equal or superior access to recreational facilities, findings quite contrary to those in the United Kingdom (73) and the United States (35). However, a subsequent Australian study found that, although persons in disadvantaged areas had equal access to public open space (74,75), the space and equipment available in those areas were of significantly lower quality, which may explain lower levels of use in disadvantaged areas (72).

As the field evolves, within- and between-country variations will increasingly become apparent with differences in socio-economic status, weather patterns, and behavioral norms, all being candidate mechanisms through which the built environment has an impact on behavioral and health outcomes. Moreover, the impact of the built environment on “hard” health end points for which physical activity is a risk factor (including diabetes, cardiovascular disease, and depression) as well as the interactions among the environment, behavior, and genetic predisposition are, as yet, relatively unexplored. Undoubtedly, larger within- and between-country studies will be required to reach this level of sophistication. At the pace at which the field is evolving, one can envisage this not being too far over the horizon.

As the quantity and quality of policy and environmental research continues to improve in many countries, local evidence and expertise is being built; together, this evidence and expertise have the potential

to be translated into policy changes that will ultimately increase physical activity. The ability of the research to inform and affect policy will depend on such factors as the policy relevance of the research questions, rigor and credibility of the research, ability of the investigators to communicate with policy makers, collaboration with advocacy organizations, and opposition to recommended evidence-based policies. Many of the papers and commentaries in this supplement to the *Journal of Public Health Policy* provide examples of policy-relevant research and principles for using research to inform policy. The guest editors hope this set of papers makes a modest contribution to improving research and the translation of research to policy change in many countries.

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