This is the author’s final peer reviewed version of the item published as:

Ball, Kylie 2006-10, People, places...and other people? Integrating understanding of intrapersonal, social and environmental determinants of physical activity, *Journal of science and medicine in sport*, vol. 9, no. 5, pp. 367-370.

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People, places… and other people?

Integrating understanding of intrapersonal, social and environmental determinants of physical activity

*Running head:* People or places
Abstract

“People or places: what should be the target?” was the provocative title of a keynote session at the fifth Australian National Physical Activity Conference held in Melbourne in 2005. This paper will argue that in fact there need not be major conflict between these views, and that couching recent debate about physical activity promotion as a polarised choice between these presents a false dichotomy. To illustrate this, the paper will consider several problems with singular approaches to understanding and promoting physical activity, and will then describe emerging empirical evidence on the nexus between people and places. To balance an increasing emphasis in the scientific literature on physical environmental determinants of physical activity, the role of intrapersonal and social factors will also be revisited. It is concluded that growing evidence supporting the multiple domains of influence on physical activity justifies calls for multi-disciplinary and multi-sectoral partnerships and approaches to the promotion of active lifestyles.

Keywords: physical activity; social ecological models; intrapersonal factors; social factors
Introduction

Problems with singular approaches to understanding and promoting physical activity

In the past, health promotion efforts targeting a range of health behaviours tended to focus primarily on individual lifestyle and behaviour change – that is, the onus was on individuals to take responsibility for managing or improving their own health [1]. This approach is problematic, however, in that individuals do not live in a vacuum; rather, our efforts to modify behaviours are often constrained (or facilitated) by a range of social, cultural, economic, and environmental forces acting within the families, peer groups, schools, workplaces, communities, neighbourhoods and countries in which we live. Furthermore, a sole focus on individual responsibility risks leading to a culture of ‘victim-blaming’, in which individuals are pressured to make behavioural changes that may be difficult or impossible, and denigrated if they do not achieve the desired change.

Increasing recognition of the limitations of individually-focused approaches to behaviour change has led to an increased enthusiasm for ecological approaches to health promotion – that is, a greater recognition of the broader social, physical and policy environmental influences on behaviours such as physical activity [1,2]. In the physical activity research field, this is reflected particularly in a growing research emphasis on physical environmental determinants. A recent search of title words “environment*” and “physical activity” in the PubMed literature database, for instance, revealed a total of 12 published papers in the 20 years between 1970 and 1990; the same search between 1991 and 2005 yielded 100 papers. Increasingly “toxic” [3] or “obesogenic” [4] environments are blamed for the epidemic of obesity sweeping Australia and other developed nations.
In many ways this increased focus on environmental determinants of health behaviours reflects a positive paradigm shift, that overcomes some of the limitations of the individually-focused approach described above; ecological approaches are more broadly encompassing in focus and hence may be less likely to result in victim-blaming. However, care should be taken not to shift our perspective too far in the opposite direction – that is, to embrace a perspective that focuses solely or exclusively on the physical environment. Such a standpoint has its own limitations. For instance, a primarily ecological approach to promoting physical activity ignores decades of previous research attesting to the importance of intrapersonal and social determinants of physical activity behaviours [5, 6]. In addition, despite living in the same environment, clearly not everyone is physically inactive, which leads us to question whether supportive environments are necessary, and also whether they are sufficient, for promoting active lifestyles.

**Nexus between people and places**

Recognition of the limitations of singular approaches to understanding and promoting physical activity has lead to increasing acknowledgment of the importance of the ‘nexus’ between people and places in determining and attempting to influence physical activity participation. It is now believed that physical activity behaviours are too complex to be understood adequately by using only a single level of analysis, such as that focused on individual ‘choice’ or responsibility alone, or that focused on environmental support or constraints alone. Despite this, to date very little research has investigated physical activity determinants from multiple domains simultaneously, and hence we currently have few insights into the relative importance of intrapersonal, social & environmental determinants of physical activity. One of few studies to do so was that of Giles-Corti and colleagues [7], who found that while environmental factors (mainly spatial access to recreational facilities)
appeared to be important in supporting participation in physical activity, the role of such physical environmental influences was found to be secondary to that of intrapersonal and social determinants.

We recently conducted a study that also aimed to investigate the relative importance of intrapersonal, social and environmental correlates, and to explain the socioeconomic inequalities in women’s physical activity participation. The SESAW (SocioEconomic Status and Activity in Women: Ball et al., under review) study design and analytical approach were multilevel, meaning that they were appropriately designed to assess the relative influence of individual-level and environmental-level determinants of physical activity. A total of 1554 women completed mailed surveys assessing a broad range of personal, social and perceived environmental correlates of physical activity; these data were linked with objective environmental data collected in audits of the 45 neighbourhoods in which women lived. Multilevel logistic regression analyses were conducted to examine the relative importance of a range of potential intrapersonal, social and environmental correlates of physical activity.

Results of one of the logistic regression models are shown in Figure 1. This figure presents the odds ratios (and 95% confidence intervals) from multilevel logistic regression analyses (adjusted for education level), examining the likelihood of any leisure-time walking among women scoring in the highest (most favourable) category for each predictor, compared with a reference category of those scoring lowest on each predictor. In general, the relative strength of environmental correlates was low compared to that of social correlates, but the strongest correlates were the intrapersonal factors – namely self-efficacy and enjoyment of walking. However, several caveats should be considered when interpreting these findings. Firstly, only a selected set of predictors were included; other intrapersonal, social and environmental
factors may have shown different relative strengths. Secondly, sequential regression models showed that the combination of intrapersonal, social and physical environmental variables collectively provided a better ‘fit’ to the model predicting walking than did any domain alone.

The findings are also cross-sectional, so causality cannot be inferred. Finally, intrapersonal factors such as self-efficacy and enjoyment may themselves be shaped by broader social and physical environmental influences; hence we are unlikely to glean as detailed an understanding of walking without also considering these broader contextual factors.

Acknowledging these caveats, the findings are nonetheless consistent with those of one of few existing studies assessing all three domains of influence simultaneously [7], and clearly suggest that intrapersonal characteristics are particularly strong correlates of leisure-time walking.

**What about the social determinants?**

Despite much ‘rhetoric’ in the scientific literature regarding the importance of ‘socio-cultural’ factors, these are often overlooked in physical activity research that focuses on people (primarily intrapersonal factors) or places (primarily physical environmental factors).

Understanding of how the social characteristics of communities influence physical activity participation is particularly poor. This is unfortunate, since, as Bandura [8] once stated, ‘Of the many cues that influence behavior, at any point in time, none is more common than the actions of others’.

A recent review of physical activity correlates studies in adults [6] identified a total of 12 demographic/biological factors; 35 psychological or behavioural factors; 15 physical environmental factors; but only four social factors that had been investigated in studies attempting to understand physical activity participation. All four social factors (social support
from friends/peers; from spouse/family; physician influence; and social isolation) were characteristics of individuals (as opposed to social characteristics of neighbourhoods, such as social capital). Despite this, the findings for this domain were among the most consistent of all domains: social support from all three sources, for instance, was found to be consistently positively predictive of physical activity across the multiple studies in which it was investigated. These findings corroborate those of earlier reviews highlighting the importance of social factors for physical activity and other health behaviours [9, 10]. This suggests that we should perhaps place more emphasis in physical activity promotion approaches on strengthening social influences – encouraging walking with family/friends, or exercise group participation, or fostering cultures in which physical activity is commonly undertaken and observed and socially desirable. Perhaps the answer to our initial question, then, is that we need to focus on “People, and places… and other people”?

Broader socio-cultural and socioeconomic determinants

Clearly there are socio-cultural factors beyond social support which may be important determinants of physical activity behaviour. There are significant barriers to physical activity, for instance, experienced by members of certain cultural groups [11]. Cultural, religious or gender beliefs, including the belief that females should focus more on domestic responsibilities, or that physical activity is not ‘feminine’, may limit physical activity participation among women of certain cultural groups. Muslim women, for instance, may require a female-only environment for participation, which is not always provided at sporting or recreational facilities. The socioeconomic environment also plays a role. We have recently described socioeconomic variations in a number of determinants of physical activity participation, including enjoyment and perceived neighbourhood crime and safety [12]. Recent anecdotal evidence from bicycle retailers in Victoria also supports the role of
economic factors in influencing physical activity. Major increases observed in bicycle sales and bicycle repairs have been attributed to rising petrol prices, leading more individuals to switch from car to bicycle as a less costly form of transport [13].

Conclusions

Intrapersonal, social and physical environmental factors are all likely to play a part in influencing physical activity participation. The limited available evidence focusing on multiple domains of influence simultaneously suggests that intrapersonal factors are often the strongest correlates of participation. However, factors from all three domains are important. Moreover, sometimes individual choice to be active is not possible, or easy. Sometimes the actions of others – friends, family, health promoters, government, industry - may facilitate these choices, by removing barriers, or providing additional incentives to encourage healthy choice. As advocates for physical activity promotion, it is no longer appropriate to use the term “choice” as a euphemism for individual responsibility. New evidence on the multiple domains of influence on physical activity provides even stronger justification for multi-disciplinary and multi-sectoral partnerships and approaches to the promotion of active lifestyles.

Practical Implications

* Public health policies and initiatives aimed at promoting physically active lifestyles must take into account a broad range of potential determinants of physical activity.
* Strategies to address barriers at the levels of the social and physical environment, as well as initiatives targeting individuals, are required.
* Given the range of determinants of physical activity, coordinated multi-sectoral partnerships may be most effective in addressing multiple barriers and facilitating more active lifestyles.
References


Figure 1. Odds ratios (and 95% confidence intervals) from multilevel logistic regression analyses (adjusted for education level), examining likelihood of leisure-time walking among women scoring in the highest category for each predictor (environmental, social, or intrapersonal), compared with a reference category of those scoring lowest (OR=1). Aesthetics and safety were assessed via self-report; bayside location was assessed objectively.