



UEL Research & Knowledge Exchange Conference 2013

Call for Abstracts

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Title of Abstract:	Absence of direct association between variables does not always mean no evidence of association: Indirect pathways between neighbourhood characteristics and physical activity.
Key Theme/ Key words:	Mediation; Indirect effects; physical activity; neighbourhood; crime; social capital

Abstract (No more than 400 words):

Background

There is a growing evidence base to suggest that neighbourhoods may support or constrain opportunities to lead healthy lifestyles through the influence of a range of social, cultural, structural and physical environment characteristics of neighbourhoods. These neighbourhood characteristics are seldom proposed to influence healthy behaviours such as physical activity directly, but are instead expected to trigger processes that may form part of chain of processes leading to influences more proximal to the individual. There are very few examples of studies that have investigated 'indirect' or 'mediated' pathways between neighbourhood characteristics and physical activity.

Understanding mediators of behaviour change is an important step in advancing theory and developing more effective interventions and is one of the most commonly made

recommendations for future research by reviewers of the literature. In the public health epidemiology literature and in other fields there has been much debate about the most appropriate methods for assessing 'indirect' or 'mediated' pathways between exposures and outcomes. One point consistently made in recent commentaries that where there is no direct association between an independent and dependant variable, this does not necessarily mean that there is no indirect association that operates through one or more mediating variable.

Methods

Quantitative analysis of correlations between a range of individual and neighbourhood characteristics and physical activity levels of residents in 40 deprived London neighbourhoods. Data on individual and neighbourhood characteristics was collected from household survey and physical environment audit data, Geographical Information Systems and routine data regarding physical characteristics the 40 neighbourhoods. Multilevel modelling in Stata 11 was used to examine associations between individual and neighbourhood characteristics and physical activity levels. The product of coefficient approach with bias-adjusted bootstrapped confidence intervals were used to estimate indirect effects.

Results

Mental wellbeing mediated indirect associations between neighbourhood characteristics and physical activity where there was no evidence of a direct effect. Safety and incivilities mediated indirect associations between crime and physical activity where there was no evidence of a direct effect. The strength of association for these indirect pathways translates into modest changes in physical activity levels.

Discussion

Evidence of indirect pathways between neighbourhood characteristics and physical activity were found in the absence of direct effects. This study demonstrates the importance of investigating the role of mediators in studies that where there is no evidence of direct associations between independent and dependant variables.