Assessing Research about Built and Social Environment in Brazil: a Systematic Review

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INTRODUCTION

The role of environment in shaping behaviors and limiting opportunities to make healthy choices has been widely investigated in developed countries. In Brazil, despite an increasing number of studies addressing this issue, the literature is still limited. Therefore, the aim of this study is to describe the trends and patterns of the Brazilian literature focused on the relationship between the built and social environment and tobacco use, alcohol consumption, physical activity, overweight/obesity, and eating habits. The purpose is to summarize the main findings, identify some possible gaps in the knowledge and, consequently, provide some recommendations for future research.

METHODS

Through a systematic literature review, we analyzed peer-reviewed articles published between 1995 and 2011 that have applied theoretical and/or methodological approaches related to built and social environment and lifestyles in Brazil. Using English and Portuguese search terms, articles were retrieved from the following electronic databases: PubMed, Web of Knowledge, Sociological Abstracts, and SciELO-Brazil. In addition, we performed reference list searching, hand-searching relevant journals, and authors searching. Two reviewers conducted independently the screening of the titles and abstracts of all articles identified, using a strict protocol. RefWorks software was used as reference manager.

The literature search identified 543 articles. After removing duplicate references and off-topic articles, 95 potentially eligible studies were selected to undergo full article review (inter-rater agreement=90%). Lastly, a total of 35 articles were deemed appropriate for analysis.

For data extraction, we used a close- and open-ended questions form, which was developed in the Microsoft Access 2007 software.

MAIN RESULTS

The physical activity domain outweighed the other lifestyles investigated, whereas smoking and alcohol consumption were less studied (**Figure 1**). A large majority of papers used subjective measures to collect data for lifestyles and environment (**Figure 2**).

Table 1 presents some methodological characteristics of the articles. About 70% of the articles were published between 2010 and 2011. Most studies used cross-sectional designs and only 2 qualitative articles were identified. Adults and elderly people were studied equally. Around 60% of the studies were carried out in only three cities: São Paulo, Curitiba, and Recife. Surveys were the most common instruments to gather information about lifestyles and environmental factors. A large proportion of articles focused on micro-environment, particularly neighborhood settings.

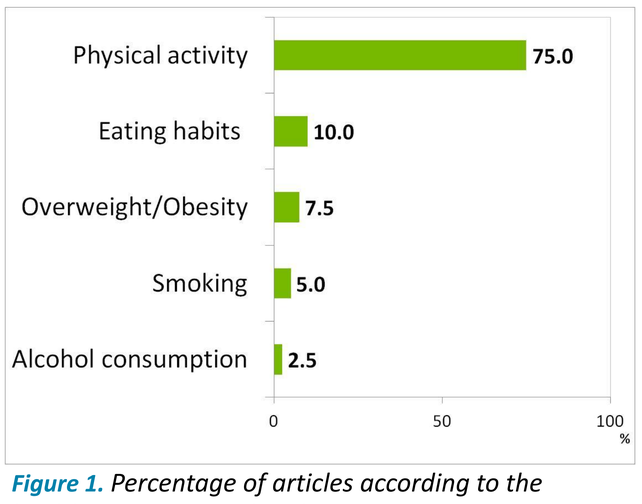

Figure 1. Percentage of articles according to the health outcomes analyzed.

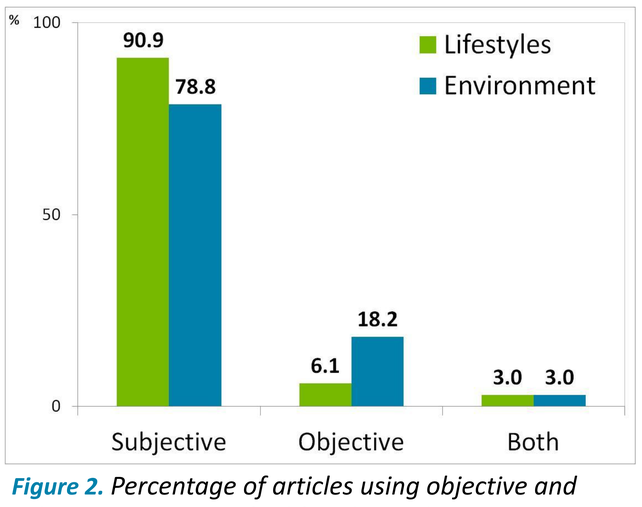

Figure 2. Percentage of articles using objective and subjective measures for lifestyles and environment.

Table 1. Methodological characteristics of the articles included in the systematic review.

Characteristics	%	Characteristics	%
Year of publication		**Lifestyles data source[1]**	
2002-2007	8.6	Survey	83.3
2008-2009	22.9	Audit	5.6
2010-2011	68.6	Focus groups	5.6
		Not applicable	5.6
Study design			
Cross-sectional	77.1	**Environmental data source[1]**	
Experimental	5.7	Survey	64.1
Ecological study	2.9	Census data/ Administrative database	12.8
Qualitative study	5.7		
Methodological text	2.9	Audit	10.3
Review	5.7	Focus groups	5.1
		Not applicable	7.7
Sample age (years)[1]			
Child/Adolescents (<18)	20.0	**Environment**	
Adults (18-59)	36.9	Micro-environment	62.9
Elderly (60+)	36.9	Macro-environment	2.9
Not determined	3.1	Both	11.4
Not applicable	3.1	Not determined	22.9
Geographic regions		**Micro-environment**	
São Paulo	23.7	Neighborhood	57.7
Curitiba	23.7	Recreational facilities	15.4
Recife	15.8	Workplace	11.5
Brazil and Latin America	2.6	School	7.7
São Paulo State	2.6	Not determined	7.7
Rio Grande do Sul State	2.6		
State capitals	2.6	**Macro-environment[1]**	
Other	26.3	Mass media	44.4
		Health promotion policies/ programs	33.3
		Urban planning	22.2

[1] Multiple answers were considered.

In comparison to the micro-environment, the macro-environment domain was less prominently featured and analysis on mass media was predominant. Most studies used non-validated questionnaires of environments (42.1%) and behavior (39.5%) (data not shown).

Recreational facilities (68.7%), walking and cycling infrastructure (60%), and accessibility to non-residential areas (54.3%) were the main built environment attributes studied (**Figure 4**). Crime safety was a prominent social environment attribute, accounting for 60% of all studies (**Figure 5**).

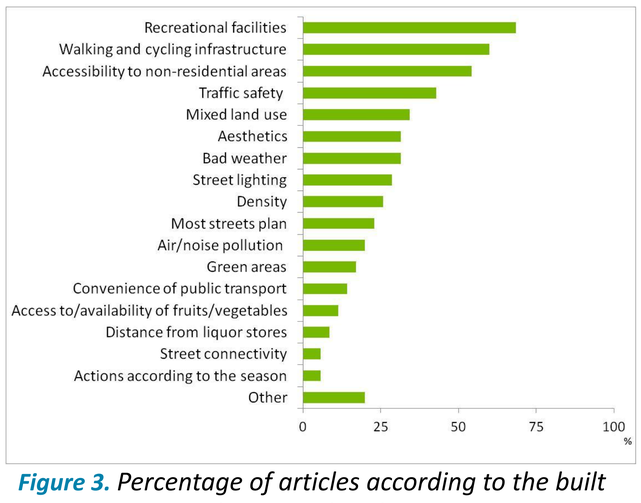

Figure 3. Percentage of articles according to the built environment attributes analyzed.

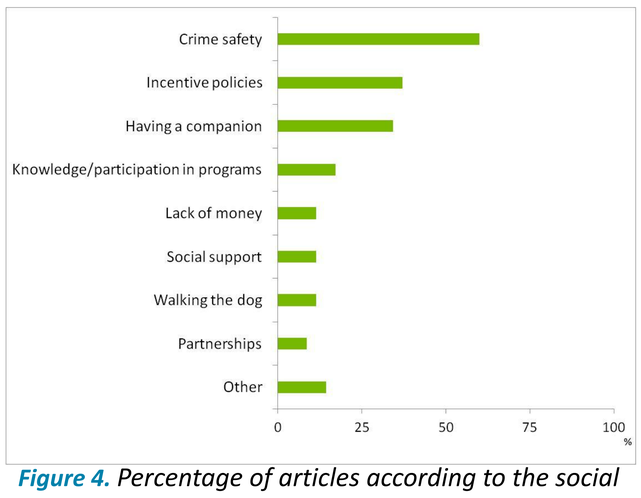

Figure 4. Percentage of articles according to the social environment attributes analyzed.

CONCLUSIONS

This systematic literature review represents the first effort to analyze the Brazilian literature related to built and social environment. As the evidence is mostly derived from cross-sectional studies, more research should be conducted with stronger study designs (such as experimental and longitudinal studies) to provide support to the findings. Qualitative evidence can also shed light into the relationships between environment and lifestyles, which could uncover factors specific to the Brazilian context. Future studies should examine the impact of environment on alcohol consumption, eating habits, and smoking, as well as apply systematic observation and geoprocessing approaches.

REFERENCES

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2. Macintyre S, Ellaway A, Cummins S. Place effects on health: how can we conceptualise, operationalise and measure them? Soc Sci Med. 2002; 55:125-39

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