



Healthy Liveable Cities (HLC) Literature Alert

Web of Science: May 2019

Record 1

Title: Exploring the association between the built environment and remotely sensed PM2.5 concentrations in urban areas

Author(s): Yuan, M (Yuan, Man)[1,2] ; Song, Y (Song, Yan)[3] ; Huang, YP (Huang, Yaping)[1,2] ; Shen, HF (Shen, Huanfeng)[4] ; Li, TW (Li, Tongwen)[4]

Source: JOURNAL OF CLEANER PRODUCTION Volume: 220 Pages: 1014-1023 DOI: 10.1016/j.jclepro.2019.02.236 Published: MAY 20 2019 Document Type:Article

Abstract: Haze, especially PM2.5, poses a serious threat to public health in China. PM2.5 primarily originates from urban activities, and built environment may affect its formation and dispersion. Previous studies were based on limited data from ground-monitoring stations, and high resolution pollution maps are unavailable for statistical analyses. In this study, a 1 km*1 km wall-to-wall map of PM2.5 concentration is developed with remote sensing data in Wuhan, China, and spatial statistics are used to figure out the influence of the built environment on PM2.5 concentrations. In terms of land cover, high-rise high-density building areas have the largest impact on PM2.5 concentrations, and the effect of forestland on the concentrations is not obvious in winter. In terms of land use, industrial lands are unrelated to air pollution in the downtown, while transportation has become a main source of PM2.5 pollution. In terms of urban form, floor area ratio and building density are positively associated with PM2.5 concentrations, and different types of road densities have different effects on air pollution. Finally, the implications of the study for urban planning and development are given. It is necessary to develop a polycentric urban structure to balance high population density and reduce traffic emissions in downtown areas. Road and bus networks should be optimized simultaneously to reduce traffic emissions and "small blocks and narrow roads" may be considered as an alternative for urban development. The spatial morphology of streets and buildings should be considered during urban design and urban renewal. In general, the study contributes to the application of remote sensing in urban planning and development, and remotely sensed PM2.5 concentration data could provide further findings than the air pollution data obtained from ground monitoring and "bottom-up" models in past studies.

Record 2

Title: Revisiting the estimations of PM2.5-attributable mortality with advancements in PM2.5 mapping and mortality statistics

Author(s): Liu, Y (Liu, Ying)[1,2] ; Zhao, NZ (Zhao, Naizhuo)[2] ; Vanos, JK (Vanos, Jennifer K.)[3] ; Cao, GF (Cao, Guofeng)[1,2]

Source: SCIENCE OF THE TOTAL ENVIRONMENT Volume: 666 Pages: 499-507 DOI: 10.1016/j.scitotenv.2019.02.269 Published: MAY 20 2019 Document Type:Article

Abstract: With the advancements of geospatial technologies, geospatial datasets of fine particulate matter (PM2.5) and mortality statistics are increasingly used to examine the health effects of PM2.5. Choices of these datasets with difference geographic characteristics (e.g., accuracy, scales, and variations) in disease burden studies can significantly impact the results. The objective of this study is to revisit the estimations of PM2.5-attributable mortality by taking advantage of recent advancements in high resolution mapping of PM2.5 concentrations and fine scale of mortality statistics and to explore the impacts of new data sources, geographic scales, and spatial variations of input datasets on mortality estimations. We estimate the PM2.5-mortality for the years of 2000, 2005, 2010 and 2015 using three PM2.5 concentration datasets [Chemical Transport Model (CTM), random forests-based regression kriging (RFRK), and geographically weighted regression (GWR)] at two resolutions (i.e., 10 km and 1 km) and mortality rates at two geographic scales (i.e., regional-level and county-level). The results show that the estimated PM2.5-mortality from the 10 km CTM-derived PM2.5 dataset tend to be smaller than the estimations from the 1 km RFRK- and GWR-derived PM2.5 datasets. The estimated PM2.5-mortalities from regional-level mortality rates are similar to the estimations from those at county level, while large deviations exist when zoomed into small geographic regions (e.g., county). In a scenario analysis to explore the possible benefits of PM2.5

concentrations reduction, the uses of the two newly developed 1 km resolution PM2.5 datasets (RFRK and GWR) lead to discrepant results. Furthermore, we found that the change in PM2.5 concentration is the primary factor that leads to the PM2.5-attributable mortality decrease from 2000 to 2015. The above results highlight the impact of the adoption of input datasets from new sources with varied geographic characteristics on the PM2.5-attributable mortality estimations and demonstrate the necessity to account for these impact in future disease burden studies.

Record 3

Title: Children's perceptions of neighbourhood environments for walking and outdoor play

Author(s): Li, C (Li, Chuo)[1] ; Seymour, M (Seymour, Michael)[1]

Source: LANDSCAPE RESEARCH Volume: 44 Issue: 4 Pages: 430-443 DOI: 10.1080/01426397.2018.1460336 Published: MAY 19 2019 Document Type:Article

Abstract: Through a questionnaire and Photo-Projective Methods (PPM), this study investigates how children perceive their neighbourhood environment for walking and outdoor play. It aims to understand what features children prefer when they walk and play in their neighbourhood. A total of 86 survey packages were mailed to households with children between 8 and 12 years old; 42 survey responses were returned for a 49% response rate. Descriptive statistics and content analysis were used to analyse the survey results. The findings of this study demonstrate natural landscape elements (such as tree groupings and streams), diverse social and play areas, and scenic streets are preferred by the children aged 8-12. The findings emphasise the importance of appropriate design and management of neighbourhood environmental features, and the value of safe street design for children's walking and outdoor play.

Record 4

Title: Ten questions concerning the built environment and mental health

Author(s): Hoisington, AJ (Hoisington, Andrew J.)[1,2,3] ; Stearns-Yoder, KA (Stearns-Yoder, Kelly A.)[2,3,4,5,6,7] ; Schuldt, SJ (Schuldt, Steven J.)[1] ; Beemer, CJ (Beemer, Cody J.)[1] ; Maestre, JP (Maestre, Juan P.)[8] ; Kinney, KA (Kinney, Kerry A.)[8] ; Postolache, TT (Postolache, Teodor T.)[2,3,9,10] ; Lowry, CA (Lowry, Christopher A.)[2,3,5,6,7,11,12] ; Brenner, LA (Brenner, Lisa A.)[2,3,4,5,6,7,13]

Source: BUILDING AND ENVIRONMENT Volume: 155 Pages: 58-69 DOI: 10.1016/j.buildenv.2019.03.036 Published: MAY 15 2019 Document Type:Article

Abstract: Most people spend the majority of their lives indoors. Research over the last thirty years has focused on investigating the mechanisms through which specific elements of the built environment, such as indoor air quality, influence the physical health of occupants. However, similar effort has not been expended in regard to mental health, a significant public health concern. One in five Americans has been diagnosed with a mental health disorder in the past year, and, in the United States, the number of suicide deaths are similar to the number of deaths due to breast cancer. Increases in mental health disorders in Western societies may be due, in part, to increased systemic inflammation, secondary to decreased exposures to a diverse microbial environment (i.e., the hygiene hypothesis, "Old Friends" hypothesis, "missing microbes" hypothesis, or biodiversity hypothesis), as well as increased environmental exposures that lead to chronic low-grade inflammation. In this review, we provide an assessment that integrates historical research across disciplines. We offer ten questions that highlight the importance of current lessons learned regarding the built environment and mental health, including a potential role for the microbiome of the built environment to influence mental health. Suggested areas for future investigation are also highlighted.

Record 5

Title: Hilly neighborhoods are associated with increased risk of weight gain among older adults in rural Japan: a 3-years follow-up study

Author(s): Okuyama, K (Okuyama, Kenta)[1] ; Abe, T (Abe, Takafumi)[1] ; Hamano, T (Hamano, Tsuyoshi)[2] ; Takeda, M (Takeda, Miwako)[1] ; Sundquist, K (Sundquist, Kristina)[3] ; Sundquist, J (Sundquist, Jan)[3] ; Nabika, T (Nabika, Toru)[4]

Source: INTERNATIONAL JOURNAL OF HEALTH GEOGRAPHICS Volume: 18 Article Number: 10 DOI: 10.1186/s12942-019-0174-z Published: MAY 10 2019 Document Type:Article

Abstract: Background: Neighborhood environments have been regularly associated with the weight status. Although the evidence is mostly limited to adults residing in western urban settings, the weight status of older adults living in rural areas is also assumed to be significantly affected by their neighborhood environments. This study aimed to identify environmental attributes specific to rural areas that could affect the risk of longitudinal weight gain among older adults (≥ 65 years) in Japan. Methods: We examined five environmental attributes, i.e., land slope, public transportation accessibility, residential density, intersection density, and the availability of parks and recreational centers, measured by the geographic information system. Our analysis was based on 714 subjects participated in Shimane Community-based Healthcare Research and Education study in 2012 and 2015. Multinomial logistic regression model was conducted to examine the association between each neighborhood environmental attribute and weight change status (gain, loss and unchanged). Results: We observed a significant increase in the risk of weight gain as the steepness of the neighborhood land slope increased. There was no significant association between other environmental attributes and risk of weight gain as well as weight loss among older adults. Conclusion: Living in hilly neighborhoods was associated with increased risk of weight gain among rural Japanese older adults. Future research should consider region-specific environmental attributes when investigating their effect on older adults' weight status.

Record 6

Title: Cross-sectional and longitudinal analysis of the active commuting behaviors of US Department of the Interior employees

Author(s): Paul, DR (Paul, David R.)[1] ; Deng, YZ (Deng, Yazhuo)[1] ; Cook, PS (Cook, Philip S.)[2]

Source: BMC PUBLIC HEALTH Volume: 19 Article Number: 526 DOI: 10.1186/s12889-019-6746-9 Published: MAY 8 2019 Document Type:Article

Abstract: Background Despite evolving evidence of the health and economic benefits of active transportation (AT) to work, few studies have examined the determinants of AT in large organizations with multiple worksites nor how trends in commuting change over time. Methods The data were obtained from the U.S. Department of the Interior Employee Commuting Census of 2010 ($n=23,230$), and 2012-2016 ($n=21,725-25,974$). The respondents were grouped into four commuting categories: non-active mode, walking, biking, and mixed-mode. Multinomial logistic regression analysis was utilized to examine the correlates of choosing AT to work for the 2010 data. Next, a repeated cross-sectional analysis was completed for all six years of data. Results In 2010, AT modes were only chosen by approximately 10% of respondents. Employees who lived farther from work and did not have a public transit station within 0.5 miles from home were generally less likely to choose AT. Respondents working in non-metro workplaces were less likely to bike or take mixed-modes to work, but more likely to walk. Men were more likely to choose AT modes, particularly biking. Respondents aged 30 yrs. were less likely to bike than those 31 to 40 yrs., but more likely than those 61 yrs. In 2010, the number of respondents that walked was higher, and biked and took mixed-modes was lower when compared to 2016, while the choice to take mixed-modes was higher in 2012 and 2013 when compared to 2016. Daily commuting distances in 2016 tended to be lower than 2010 and 2012, and higher than 2013. However, overall AT choice and commute distance remained reasonably stable over time. Conclusions Respondents who lived close to their workplace and a public transportation station, worked in a metro location, were male and younger were more likely to choose AT modes to work. The results provide insight for the U.S. Department of the Interior and other large organizations to develop intervention strategies that support AT to work. Further research is warranted to understand the concurrent individual, social, and environmental barriers and facilitators for choosing AT to work.

Record 7

Title: The perceived neighborhood environment is associated with health-enhancing physical activity among adults: a cross-sectional survey of 13 townships in Taiwan

Author(s): Chiang, CC (Chiang, Chi-Chen)[1,2] ; Chiou, ST (Chiou, Shu-Ti)[3,4] ; Liao, YM (Liao, Yuan-Mei)[5] ; Liou, YM (Liou, Yiing Mei)[6,7]

Source: BMC PUBLIC HEALTH Volume: 19 Article Number: 524 DOI: 10.1186/s12889-019-6848-4
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Abstract: Background Many environmental factors have been associated with physical activity. The environment is considered a key factor in terms of the rate of engagement in physical activity. This study examined the perceived effect of environmental factors on different levels of health-enhancing physical activity among Taiwanese adults. Methods Data were collected from 549 adults aged at least 18 years from the northern, central, southern and eastern regions of Taiwan. Physical activity was measured using the International Physical Activity Questionnaire (IPAQ) showcard version, and participants were divided into three categories: those who performed low-, moderate-, or high-levels of physical activity, as suggested by the IPAQ scoring protocol. The perceived neighborhood environment in relation to physical activity was adapted from the Physical Activity Neighborhood Environment Scale. A multinomial logistic regression was conducted to ascertain associations between individual perceptions of the neighborhood environment and different physical activity levels. Results Respondents who perceived their neighborhood environment as having easy access to services and stores, and higher traffic safety were more likely to be moderate level of physical activity (odds ratio [OR]: 1.90, 95% confidence interval [CI]: 1.07-3.37; OR: 1.77, 95% CI: 1.12-2.80). The perception of having easy access to services and stores and seeing many physically active people in the neighborhood were both positively associated with a high level of physical activity (OR: 2.25, 95% CI: 1.01-5.01; OR: 2.40, 95% CI: 1.11-5.23). Conclusions Different perceived neighborhood environmental factors were associated with moderate and high levels of physical activity, respectively. These findings highlight the importance of an activity-friendly neighborhood environment to stimulate engagement in physical activity among adults in Taiwan. Therefore, policies and programs should focus on improving friendliness and diversity in neighborhoods to facilitate individuals' transitions from inactive to active lifestyles.

Record 8

Title: Rethinking the Geographies of Walkability in Small City Centers

Author(s): Waitt, G (Waitt, Gordon)[1] ; Stratford, E (Stratford, Elaine)[2] ; Harada, T (Harada, Theresa)[1]

Source: ANNALS OF THE AMERICAN ASSOCIATION OF GEOGRAPHERS Volume: 109 Issue: 3 Pages: 926-942 DOI: 10.1080/24694452.2018.1507815 Published: MAY 4 2019 Document Type:Article

Abstract: What can be learned from conversations about walkability per se and specific ideas about the embodied geographies of walking? In this article, we work with the idea of a walking assemblage and the related concept of territory to clarify how social and material entities might promote or impede journeys on foot. Our analysis is grounded in ethnographic data collected about everyday walking among twenty-five residents in the center of Wollongong, a small city on the east coast of Australia. In presenting our interpretation, we attend to the embodied geographies of walkability. The concept of territory offers the potential to think about walkability as both performed and enfolded via the emotional and affective forces between and through proximate bodies and objects through processes of reterritorialization and deterritorialization. Although our case study is specific, our conceptual gaze is extensive and has salience for others concerned with walking, with small cities, and with thinking about how best to foster the conditions in which people thrive. We offer theoretical and policy-relevant conclusions that signal the importance of engaging with the nuances of the embodied geographies of walking.

Record 9

Title: Initial Evidence of the Relationships between the Human Postmortem Microbiome and Neighborhood Blight and Greening Efforts

Author(s): Pearson, AL (Pearson, Amber L.)[1,2,3] ; Rzotkiewicz, A (Rzotkiewicz, Amanda)[1] ; Pechal, JL (Pechal, Jennifer L.)[4] ; Schmidt, CJ (Schmidt, Carl J.)[5,6] ; Jordan, HR (Jordan, Heather R.)[7] ; Zwickle, A (Zwickle, Adam)[2,8] ; Benbow, ME (Benbow, M. Eric)[4,9]

Source: ANNALS OF THE AMERICAN ASSOCIATION OF GEOGRAPHERS Volume: 109 Issue: 3 Pages: 958-978 DOI: 10.1080/24694452.2018.1519407 Published: MAY 4 2019 Document Type:Article

Abstract: The microbiome is important in human health, yet its connection to the built environment remains understudied. Little is known about the potential influence of neighborhood environments on the bacterial and archaea communities that live in and on the human body, henceforth the microbiome. Thus, we examined relationships between the microbiome and features of the urban environment. To do this, we first quantified neighborhood levels of blight (e.g., abandoned buildings) and green remediation (e.g., tree plantings) using parcel data in Detroit, Michigan, and then compared neighborhood status to the composition and diversity of the human postmortem microbiome. The postmortem microbiome served as a surrogate for biological signatures and lifestyles of living neighborhood residents. We observed significant clustering of microbial composition by neighborhood blight, with significantly higher abundances of potential pathogens associated with unhealthy living conditions. We also observed significant clusters between high and low green remediation for the mouth and eye communities only, with high levels of commensals (or nonharmful bacteria) in green remediation neighborhoods. Microbial biodiversity was significantly and positively correlated with green remediation and negatively correlated with blight. Regression models yielded the largest positive effects of green remediation on microbial richness (rectum) and diversity (nose) for women; the largest negative effects of blight were observed for evenness (eyes) among women and richness and diversity (mouth and nose) among men. These results provide evidence of a relationship between the human microbiome and neighborhood conditions, establishing the foundation for novel research opportunities into the effects of green remediation and urban blight on health.

Record 10

Title: Immersive Nature-Experiences as Health Promotion Interventions for Healthy, Vulnerable, and Sick Populations? A Systematic Review and Appraisal of Controlled Studies

Author(s): Mygind, L (Mygind, Laerke)[1] ; Kjeldsted, E (Kjeldsted, Eva)[1] ; Hartmeyer, RD (Hartmeyer, Rikke Dalgaard)[1] ; Mygind, E (Mygind, Erik)[2] ; Bolling, M (Bolling, Mads)[1] ; Bentsen, P (Bentsen, Peter)[1,2]

Source: FRONTIERS IN PSYCHOLOGY Volume: 10 Article Number: 943 DOI: 10.3389/fpsyg.2019.00943 Published: MAY 3 2019 Document Type:Review

Abstract: In this systematic review, we summarized and evaluated the evidence for effects of, and associations between, immersive nature-experience on mental, physical, and social health promotion outcomes. Immersive nature-experience was operationalized as non-competitive activities, both sedentary and active, occurring in natural environments removed from everyday environments. We defined health according to the World Health Organization's holistic and positive definition of health and included steady-state, intermediate, and health promotion outcomes. An electronic search was performed for Danish, English, German, Norwegian, and Swedish articles published between January 2004 and May 2017. Manual approaches, e.g., bibliographies from experts, supplemented the literature search. Data were extracted from 461 publications that met the inclusion criteria. To assess the status and quality of the evidence for health promotion effects of immersive nature-experience, we focused on the subset of studies based on controlled designs (n = 133). Outcome level quality of the evidence was assessed narratively. Interventions most often involved adventure-based activities, short-termed walking, and seated relaxation in natural environments. We found positive effects on a range of health promotion outcomes grouped under psychological wellbeing (n = 97; approximate to 55% positive; approximate to 13% mixed; approximate to 29% non-significant; 2% negative); psychosocial function (n = 67; approximate to 61% positive; approximate to 9% mixed; approximate to 30%non-significant); psychophysiological stress response (n =

50; approximate to 58% positive; approximate to 18% mixed; approximate to 24% non-significant), and cognitive performance (n = 36; approximate to 58% positive; approximate to 6% mixed; approximate to 33% non-significant; 3% negative); and social skills and relationships (n = 34; approximate to 70% positive; approximate to 7% mixed; approximate to 22% non-significant). Findings related to outcomes categorized under physical health, e.g., risk of cardiovascular disease, were less consistent (n = 51; approximate to 37% positive; approximate to 28% mixed; approximate to 35% non-significant). Across the types of interventions and outcomes, the quality of the evidence was deemed low and occasionally moderate. In the review, we identify, discuss, and present possible solutions to four core methodological challenges associated with investigating immersive nature-experience and health outcomes: (1) intervention and program complexity; (2) feasibility and desirability of randomization; (3) blinding of participants and researchers; and (4) transferability and generalizability. The results of the review have been published as a popular-scientific report and a scientific research overview, both in Danish language.

Record 11

Title: An overview of GeoAI applications in health and healthcare

Author(s): Boulos, MNK (Boulos, Maged N. Kamel)[1] ; Peng, GC (Peng, Guochao)[1] ; VoPham, T (Trang VoPham)[2,3]

Source: INTERNATIONAL JOURNAL OF HEALTH GEOGRAPHICS Volume: 18 Article Number: 7 DOI: 10.1186/s12942-019-0171-2 Published: MAY 2 2019 Document Type:Editorial Material

Abstract: The moulding together of artificial intelligence (AI) and the geographic/geographic information systems (GIS) dimension creates GeoAI. There is an emerging role for GeoAI in health and healthcare, as location is an integral part of both population and individual health. This article provides an overview of GeoAI technologies (methods, tools and software), and their current and potential applications in several disciplines within public health, precision medicine, and Internet of Things-powered smart healthy cities. The potential challenges currently facing GeoAI research and applications in health and healthcare are also briefly discussed.

Record 12

Title: A pan-Canadian measure of active living environments using open data

Author(s): Herrmann, T (Herrmann, Thomas)[1] ; Gleckner, W (Gleckner, William)[1] ; Wasfi, RA (Wasfi, Rania A.)[1,2,3] ; Thierry, B (Thierry, Benoit)[2,3] ; Kestens, Y (Kestens, Yan)[2,3] ; Ross, NA (Ross, Nancy A.)[1]

Source: HEALTH REPORTS Volume: 30 Issue: 5 Pages: 16-25 DOI: 10.25318/82-003-x201900500002-eng Published: MAY 2019 Document Type:Article

Abstract: Background: Neighbourhood environments that support active living, such as walking or cycling for transportation, may decrease the burden of chronic conditions related to sedentary behaviour. Many measures exist to summarize features of communities that support active living, but few are pan-Canadian and none use open data sources that can be widely shared. This study reports the development and validation of a novel set of indicators of active living environments using open data that can be linked to national health surveys and can be used by local, regional or national governments for public health surveillance. Data and methods: A Geographic Information System (GIS) was used to calculate a variety of measures of the connectivity, density and proximity to destinations for 56,589 dissemination areas (DAs) across Canada (2016 data). Pearson correlation coefficients were calculated to assess the association between each measure and the rates of walking to work and taking active transportation to work (a combination of walking, cycling and using public transportation) from census data. The active living environment measures selected for the final database were used to classify the DAs by the favourability of their active living environment into groups by k-medians clustering. Results: All measures were correlated with walking-to-work and active-transportation-to-work rates at the DA level, whether they were derived using proprietary or open data sources. Coverage of open data was consistent across Canadian regions.

Three measures were selected for the Canadian Active Living Environments (Can-ALE) dataset based on the correlation analysis, but also on the principles of suitability for a variety of community sizes and openly available data: (1) three-way intersection density of roads and footpaths derived from OpenStreetMap (OSM), (2) weighted dwelling density derived from Statistics Canada dwelling counts and (3) points of interest derived from OSM. A measure of access to public transportation was added for the subset of DAs in larger urban areas and was strongly related to active-transportation-to-work rates. Active-transportation-to-work rates were graded, in steps, by the five Can-ALE groups derived from the cluster analysis, although walking-to-work rates exceeded the national average only in the most favourable active living environments.

Record 13

Title: Association of objectively measured and perceived environment with accelerometer-based physical activity and cycling: a Swiss population-based cross-sectional study of children

Author(s): Bringolf-Isler, B (Bringolf-Isler, Bettina)[1,2] ; Schindler, C (Schindler, Christian)[1,2] ; de Hoogh, K (de Hoogh, Kees)[1,2] ; Kayser, B (Kayser, Bengt)[3] ; Suggs, LS (Suggs, L. Suzanne)[4] ; Dossegger, A (Doessegger, Alain)[5] ; Probst-Hensch, N (Probst-Hensch, Nicole)[1,2] ; Mahler, N (Maehler, Nadja)[6] ; Mader, U (Mader, Urs)[6] ; Wyss, T (Wyss, Thomas)[6] Stoffel-Kurth, N (Stoffel-Kurth, Nadine)[6] ; Favero, K (Favero, Kathrin)[6] ; Poffet, A (Poffet, Andrea)[6] ; Schneider, J (Schneider, Jvo)[7] ; Guggenbuhl, L (Guggenbuehl, Lisa)[7] ; Braun-Fahrländer, C (Braun-Fahrländer, Charlotte)[8] ; Isler, S (Isler, Simone)[8] Group Author(s): SOPHYA Study Grp

Source: INTERNATIONAL JOURNAL OF PUBLIC HEALTH Volume: 64 Issue: 4 Pages: 499-510 DOI: 10.1007/s00038-019-01206-3 Published: MAY 2019 Document Type:Article

Abstract: Objectives We tested whether objectively assessed neighbourhood characteristics are associated with moderate-to vigorous physical activity (MVPA) and cycling in Swiss children and adolescents and assessed the mediating role of the perception of the environment. Methods The cross-sectional analyses were based on data of 1306 participants aged 6-16 years of the population-based SOPHYA study. MVPA was measured by accelerometry, time spent cycling and the perceived environment by questionnaire. Objective environmental parameters at the residential address were GIS derived. In all analyses, personal, social and environmental factors were considered. Results MVPA showed significant positive associations with perceived personal safety and perceived access to green spaces but not with respective objective parameters. Objectively assessed main street density and shorter distance to the next public transport were associated with less cycling in adolescents. Parents' perceptions did not mediate the observed associations of the objectively assessed environment with MVPA and cycling. Conclusions Associations between the environment and physical activity differ by domain. In spatial planning efforts to improve objective environments should be complemented with efforts to increase parental sense of security.

Record 14

Title: Neighbourhood environment and transport-related and leisure-time sedentary behaviour amongst women in a city in Southern Brazil: a multilevel analysis

Author(s): Cafruni, CB (Cafruni, Cristina Borges)[1,2] ; Pattussi, MP (Pattussi, Marcos Pascoal)[2] ; Backes, V (Backes, Vanessa)[2] ; da Costa, JD (da Costa, Juvenal Dias)[2] ; Olinto, MTA (Anselmo Olinto, Maria Teresa)[2] ; de Bairros, FS (de Bairros, Fernanda Souza)[1,2] ; Henn, RL (Henn, Ruth Liane)[2]

Source: INTERNATIONAL JOURNAL OF PUBLIC HEALTH Volume: 64 Issue: 4 Pages: 511-522 DOI: 10.1007/s00038-019-01229-w Published: MAY 2019 Document Type:Article

Abstract: Objectives To assess the association between neighbourhood environmental variables and excessive transport-related and leisure-time sedentary behaviour (ETSB and ELSB, respectively) amongst adult women in Southern Brazil. Methods A cross-sectional survey was conducted using a representative sample of 1079 women 20 to 69 years of age who lived in 44 neighbourhoods. Each neighbourhood was

determined by drawing a 400-m buffer around the median point of the participants' homes. Neighbourhoods were assessed by audit and by using government data. Sedentary behaviour (SB) and the remaining individual variables were assessed via questionnaire that was administered as an interview. Multilevel logistic regression analysis was conducted. Results In the adjusted analysis, women who lived in neighbourhoods with a higher percentage of terrain slope and fewer public recreation areas per resident had significantly ($p \leq 0.05$) increased odds of exhibiting ETSB and ELSB, with 50% and 40% increases, respectively. Conclusions The results show that some aspects of the neighbourhood environment such as terrain slope and total public recreation areas per resident are related to specific SBs, indicating that improvements in neighbourhoods can reduce SB in women.

Record 15

Title: Obesity risk in women of childbearing age in New Zealand: a nationally representative cross-sectional study

Author(s): Hobbs, M (Hobbs, Matthew)[1] ; Tomintz, M (Tomintz, Melanie)[1] ; McCarthy, J (McCarthy, John)[2] ; Marek, L (Marek, Lukas)[1] ; Vannier, C (Vannier, Clemence)[1] ; Campbell, M (Campbell, Malcolm)[1,3] ; Kingham, S (Kingham, Simon)[1,3]

Source: INTERNATIONAL JOURNAL OF PUBLIC HEALTH Volume: 64 Issue: 4 Pages: 625-635 DOI: 10.1007/s00038-019-01239-8 Published: MAY 2019 Document Type:Article

Abstract: Objectives To investigate risk factors for women with obesity of childbearing age. Methods A cross-sectional survey of New Zealand women (15–49 years) with measured height and weight was used [unweighted ($n = 3625$) and weighted analytical sample ($n = 1,098,372$)] alongside sociodemographic-, behavioural- and environmental-level predictors. Multilevel logistic regression weighted for non-response of height and weight data was used. Results Meeting physical activity guidelines (AOR (adjusted odds ratio) 0.66, 95% CI 0.54–0.80), Asian (AOR 0.15, 95% CI 0.10–0.23) and European/other ethnicity (AOR 0.46, 95% CI 0.36–0.58) and an increased availability of public greenspace (Q4 AOR 0.55, 95% CI 0.41–0.75) were related to decreased obesity risk. Older age (45–49 years AOR 3.01, 95% CI 2.17–4.16), Pacific ethnicity (AOR 2.81, 95% CI 1.87–4.22), residing in deprived areas (AOR 1.65, 95% CI 1.16–2.35) or secondary urban areas (AOR 1.49, 95% CI 1.03–2.18) were related to increased obesity risk. When examined by rural/urban classification, private greenspace was only related to increased obesity risk in main urban areas. Conclusions This study highlights factors including but not limited to public greenspace, which inform obesity interventions for women of childbearing age in New Zealand.

Record 16

Title: Urban planning as an enabler of urban health: Challenges and good practice in England following the 2012 planning and public health reforms

Author(s): Carmichael, L (Carmichael, Laurence)[1] ; Townshend, TG (Townshend, Tim G.)[2] ; Fischer, TB (Fischer, Thomas B.)[3] ; Lock, K (Lock, Karen)[4] ; Petrokofsky, C (Petrokofsky, Carl)[5] ; Sheppard, A (Sheppard, Adam)[1] ; Sweeting, D (Sweeting, David)[6] ; Ogilvie, F (Ogilvie, Flora)[5]

Source: LAND USE POLICY Volume: 84 Pages: 154-162 DOI: 10.1016/j.landusepol.2019.02.043 Published: MAY 2019 Document Type:Article

Abstract: This article synthesises the challenges faced by the English (urban) spatial planning system to become an enabler of urban health and explores some key features of the evidence base, policy tools and policy implementation issues that urban planners need to be aware of to become health enablers. It draws on good practice identified in an Economic and Social Research Council (ESRC) seminar series involving over 500 academic researchers and practitioners between 2015 and 2017. A number of key recommendations emerged out of the project. First, planning and health agendas must align at the local level. Second, the evidence base of health priorities must be locally relevant. Third, robust tools can support the creation of frameworks for delivering health outcomes through planning. And finally, adequate resources are necessary to develop the capacity of key place-making stakeholders.

Record 17

Title: Associations between overhead-view and eye-level urban greenness and cycling behaviors

Author(s): Lu, Y (Lu, Yi)[1,2] ; Yang, YY (Yang, Yiyang)[1] ; Sun, GB (Sun, Guibo)[3] ; Gou, ZH (Gou, Zhonghua)[4]

Source: CITIES Volume: 88 Pages: 10-18 DOI: 10.1016/j.cities.2019.01.003 Published: MAY 2019
Document Type:Article

Abstract: Cycling is one type of physical activities with documented health and environmental benefits. Little consensus has been reached about the impacts of urban greenness on cycling behavior because of the widely varying estimation techniques, especially at street scale. We objectively measured the urban greenness in two ways: overhead-view greenness by Normalized Difference Vegetation Index (NDVI) and eye-level street greenness by Google Street View (GSV) images. Multilevel logistic regression models were used to examine the association between urban greenness and the odds of cycling (versus not cycling) for 5701 Hong Kong participants after controlling activity-influencing built environment and individual-level covariates. We found the odds of cycling were positively associated with eye-level street greenness but not with overhead-view greenness across three buffer zones: 400 m, 800 m and 1600 m. In addition, the odds of cycling were negatively associated with population density, number of bus stops, and terrain slope, while positively associated with bike lane density. To build a cycling-friendly city, planners and designers might need to pay more attention to improve citizens' daily exposure to urban greenness, instead of traditional greenspace indices such as greenspace area or number of parks. The GSV technique is a novel and reliable method for measuring eye-level urban greenness with potential usage in further healthy city studies.

Record 18

Title: The equitable use concept in sidewalk design

Author(s): Aghaabbasi, M (Aghaabbasi, Mahdi)[1] ; Moeinaddini, M (Moeinaddini, Mehdi)[1] ; Asadi-Shekari, Z (Asadi-Shekari, Zohreh)[1] ; Shah, MZ (Shah, Muhammad Zaly)[1]

Source: CITIES Volume: 88 Pages: 181-190 DOI: 10.1016/j.cities.2018.10.010 Published: MAY 2019
Document Type:Article

Abstract: Equitable use (EU) is the first principle of universal design and promotes the usefulness and marketability of products for people with diverse abilities. Sidewalks, as the main circulation path for pedestrian transportation, can be designed and assessed based on this principle to improve their usability for all pedestrians. Currently, there is no clear definition of EU in the sidewalk design criteria; consequently, no design and assessment guidelines are based on this concept. This study aims to remedy this shortcoming in knowledge by defining and translating the theoretical and conceptual components of the characteristics of EU for sidewalks. This study also attempts to identify the contributions of sidewalk design factors in the main dimensions of EU applied to sidewalks. To achieve these objectives, we conduct an extensive literature review of available universal design guidelines and handbooks as well as scientific articles regarding the implementation of EU in outdoor environments and sidewalks. The results of this review contribute to the development of conceptual models to define EU in sidewalk design. A questionnaire was administered to collect data to test the fitness of these conceptual models. Fitness tests are conducted with structural equation modelling (SEM). The EU translation can be useful for designing and assessing sidewalks to ensure that sidewalks serve people with various abilities on an equal basis.

Record

Title: Types of suburbs in post-socialist Poland and their potential for creating public spaces

Author(s): Mantey, D (Mantey, Dorota)[1] ; Sudra, P (Sudra, Pawel)[2,3]

Source: CITIES Volume: 88 Pages: 209-221 DOI: 10.1016/j.cities.2018.11.001 Published: MAY 2019
Document Type:Article

Abstract: The aim of this article is to distinguish types of the suburbs that are typical for post-socialist European countries. The typology organizes the variety of suburban forms according to the degree to which they favour the creation of public spaces, or the access to such spaces in the city or nearby town. A new typology is based on six criteria: (1) the level of neighbourhood (spatial scale), (2) the time when the neighbourhood was erected, (3) spatial interaction with the nearest town/city, (4) the prevailing type of investment, (5) street layout, (6) access to the city centre by public transport. Suburbs are diversified in terms of their potential for the establishment of public spaces. It has been proved that individual housing in the form of neighbourhoods which are planned, densely populated and based on street grid is the most preferred type from the perspective of building social capital. The typology was developed for Warsaw Metropolitan Region, although it may be applied also in the research of post-socialist countries other than Poland and urban regions within them.

Record 19

Title: Street life and the built environment in an auto-oriented US region

Author(s): Park, K (Park, Keunhyun)[1] ; Ewing, R (Ewing, Reid)[2] ; Sabouri, S (Sabouri, Sadeh)[2] ; Larsen, J (Larsen, Jon)[3]

Source: CITIES Volume: 88 Pages: 243-251 DOI: 10.1016/j.cities.2018.11.005 Published: MAY 2019
Document Type:Article

Abstract: Urban planners and designers believe that the built environment at various geographic scales affects pedestrian activity, but have limited empirical evidence at the street scale, to support their claims. We are just beginning to identify and measure the qualities that generate active street life, and this paper builds on the first few studies to do so. This study measures street design qualities and surrounding urban form variables for 881 block faces in Salt Lake County, Utah, and relates them to pedestrian counts. This is the largest such study to date and includes suburbs as well as cities. At the neighborhood scale, we find that D variables development density, accessibility to destinations, and distance to transit are significantly associated with the pedestrian activity. At the street scale, we find significant positive relationships between three urban design qualities imageability, human scale, and complexity and pedestrian counts, after controlling for neighborhood-scale variables. Finally, we find that pedestrian counts are positively associated with seven of twenty streetscape features historic buildings, outdoor dining, buildings with identifiers, less sky view, street furniture, active uses, and accent building colors. This study provides implications for streetscape projects that aim to create walkable places in typical auto-oriented, medium-sized cities.

Record 20

Title: Prospective Associations Between Play Environments and Pediatric Obesity

Author(s): Fitzpatrick, C (Fitzpatrick, Caroline)[1,2,3] ; Alexander, S (Alexander, Stephanie)[4] ; Henderson, M (Henderson, Melanie)[5,6] ; Barnett, TA (Barnett, Tracie A.)[6,7]

Source: AMERICAN JOURNAL OF HEALTH PROMOTION Volume: 33 Issue: 4 Pages: 541-548 DOI: 10.1177/0890117118807211 Published: MAY 2019 Document Type:Article

Abstract: Purpose: To identify school typologies based on the availability of play equipment and installations. We also examined the associations between availability of play items and child adiposity. Design: Secondary analysis of longitudinal data. Setting: Elementary schools in Montreal, Canada. Participants: We used data from the Quebec Adipose and Lifestyle Investigation in Youth study (QUALITY), an ongoing investigation of the natural history of obesity and type 2 diabetes in Quebec children of Caucasian descent. Measures: The presence of play items was assessed in each child's school. A trained nurse directly assessed child anthropometric measurements to derive body mass index and waist

circumference. Body fat composition was measured using DEXA Prodigy Bone Densitometer System. Analyses: The final analytic sample comprised 512 students clustered in 296 schools (81% response). We used K-cluster analyses to identify school typologies based on the variety of play items on school grounds. Generalized estimation equations were used to estimate associations between school clusters and outcomes. Results: We identified 4 distinct school typologies. Children in schools with the most varied indoor play environments had lower overall body fat, $B = -1.26$ cm (95% confidence interval [CI], -2.28 to -0.24 cm), and smaller waist circumference, $B = -4.42$ cm (95% CI, -7.88 to -0.96 cm), compared to children with the least varied indoor play environment. Conclusion: Our results suggest that policies regulating the availability of play items in schools may enrich comprehensive school-based obesity prevention strategies. Extending research in this area to diverse populations is warranted.

Record 21

Title: Cost-Effectiveness of Improvements to the Built Environment Intended to Increase Physical Activity

Author(s): Knell, G (Knell, Gregory)[1,2] ; Brown, HS (Brown, Henry S.)[2,3] ; Gabriel, KP (Gabriel, Kelley P.)[2,4,5] ; Durand, CP (Durand, Casey P.)[1,2] ; Shuval, K (Shuval, Kerem)[6,7] ; Salvo, D (Salvo, Deborah)[2,4] ; Kohl, HW (Kohl, Harold W., III)[2,4,8]

Source: JOURNAL OF PHYSICAL ACTIVITY & HEALTH Volume: 16 Issue: 5 Pages: 308-317 DOI: 10.1123/jpah.2018-0329 Published: MAY 2019 Document Type:Article

Abstract: Background: Improving sidewalks may encourage physical activity by providing safe, defined, and connected walking spaces. However, it is unknown if reduced health care expenditures assumed by increased physical activity offset the investment for sidewalk improvements. Methods: This cost-effectiveness analysis of sidewalk improvements in Houston, TX, was among adults enrolled in the Houston Travel-Related Activity in Neighborhoods Study, 2013-2017. The 1-year change in physical activity was measured using self-report ($n = 430$) and accelerometry ($n = 228$) and expressed in metabolic equivalent (MET) hours per year (MET.h.y(-1)). Cost-effectiveness ratios were calculated by comparing annualized sidewalk improvement costs (per person) with 1-year changes in physical activity. Results: The estimated cost-effectiveness ratio were \$0.01 and -\$0.46 per MET.h.y(-1) for self-reported and accelerometer-derived physical activity, respectively. The cost-effectiveness benchmark was \$0.18 (95% confidence interval, \$0.06-\$0.43) per MET.h.y(-1) gained based on the volume of physical activity necessary to avoid health care costs. Conclusions: Improving sidewalks was cost-effective based on self-reported physical activity, but not cost-effective based on accelerometry. Study findings suggest that improving sidewalks may not be a sufficient catalyst for changing total physical activity; however, other benefits of making sidewalks more walkable should be considered when deciding to invest in sidewalk improvements.

Record 22

Title: Association of School Physical Activity Policies With Student Physical Activity Behavior

Author(s): Ganzar, LA (Ganzar, Leigh Ann)[1] ; Ranjit, N (Ranjit, Nalini)[1] ; Saxton, D (Saxton, Debra)[2] ; Hoelscher, DM (Hoelscher, Deanna M.)[1]

Source: JOURNAL OF PHYSICAL ACTIVITY & HEALTH Volume: 16 Issue: 5 Pages: 340-347 DOI: 10.1123/jpah.2018-0057 Published: MAY 2019 Document Type:Article

Abstract: Background: Few studies have examined school physical activity policies to assess dose-response on student outcomes. The purpose of this study was to evaluate the association between health-promoting physical activity policies in elementary schools and physical activity behavior. Methods: In this cross-sectional study, physical activity was assessed using self-report measures in fourth-grade students in Texas ($N = 1958$, $x = 9.66$ y) from the School Physical Activity and Nutrition (SPAN) survey. School policies were assessed using the number of health-promoting policies in place taken from the SPAN School Health Survey with principals and their proxies. Multiple linear regressions adjusted for student- and school-level confounders and school clustering were performed. Results: School physical activity policies were

significantly associated with student-level physical activity behavior ($P < .05$), even after controlling for the student- and school-level confounding variables. The interactions between physical activity policy-by-economic disadvantage ($P < .01$) and between physical activity policy-by-geographic strata ($P < .01$) were both significant, with stronger direct effects of policies on student physical activity for economically disadvantaged schools and major urban schools. Conclusion: Results from this study provide evidence for the importance of school-based health policies and practices in potentially reducing health disparities, especially in low-income and urban schools.

Record 23

Title: Physical Activity and Active Commuting in Relation to Objectively Measured Built-Environment Attributes Among Adolescents

Author(s): Queralta, A (Queralta, Ana)[1,2] ; Molina-Garcia, J (Molina-Garcia, Javier)[2,3]

Source: JOURNAL OF PHYSICAL ACTIVITY & HEALTH Volume: 16 Issue: 5 Pages: 371-374 DOI: 10.1123/jpah.2018-0170 Published: MAY 2019 Document Type:Article

Abstract: Background: The associations between objectively measured built-environment attributes and physical activity (PA) behavior have not been extensively studied in adolescents. This research aimed to analyze the associations between built-environment attributes and moderate to vigorous PA and active commuting among adolescents. Methods: Our sample comprised 465 Spanish adolescents (aged 14-18 y) who were recruited from the IPEN Adolescent study. The built-environment attributes around participant's home (0.25-, 0.5-, and 1-km street-network buffers) and moderate to vigorous PA were objectively measured. Results: Net residential density and urban greenland area were positively associated with moderate to vigorous PA in 0.25- and 1-km buffers, respectively, and street intersection density was positively associated with active commuting, both in the 0.5- and 1-km buffers. Conclusion: This study highlights the importance of assessing adolescents' neighborhoods when PA behavior is analyzed and when targeting PA interventions to promote health-enhancing behaviors.

Record 24

Title: Associations of Socio-demographic, Family, and Neighborhood Factors with Physical Activity-Related Parenting Practices Among Hong Kong Preschoolers' Parents

Author(s): Suen, YN (Suen, Yi-nam)[1] ; Cerin, E (Cerin, Ester)[2,3] ; Barnett, A (Barnett, Anthony)[2] ; Huang, WYJ (Huang, Wendy Y. J.)[4] ; Mellecker, RR (Mellecker, Robin R.)[5]

Source: MATERNAL AND CHILD HEALTH JOURNAL Volume: 23 Issue: 5 Pages: 678-691 DOI: 10.1007/s10995-018-2689-5 Published: MAY 2019 Document Type:Article

Abstract: Objectives Regular engagement in physical activity (PA) has numerous health benefits in young children. Young children's parents can influence their children's PA behavior through different PA-related parenting practices. This cross-sectional study examined the independent contributions of socio-demographic, family/home and parent-perceived neighborhood environmental characteristics explaining PA-related parenting practices encouraging or discouraging PA among Hong Kong preschool-aged children (3-5 years-old). Methods Hong Kong Chinese preschoolers' parents were recruited from pre-selected kindergartens and Maternal and Child Health Centers located in areas stratified by residential density and socio-economic status. They self-completed socio-demographic, family/home and perceived neighborhood characteristics and PA-related parenting practices questionnaires. Generalized linear models were used to examine associations of socio-demographic, family/home and neighborhood variables with PA-related parenting practices. Results Socio-demographic and family/home characteristics were significantly correlated with parenting practices encouraging and discouraging PA. Parent-perceived neighborhood characteristics were significantly correlated with parenting practices discouraging PA only. Conclusions for Practice This study identified correlates of PA-related parenting practices among parents of Hong Kong Chinese preschoolers. The findings suggest future PA-promoting interventions among Chinese preschoolers via the promotion of parenting practices encouraging children's PA should consider multiple

factors, including family relationships and childcare sharing, promotion of PA and its benefits among parents, and neighborhood social cohesion, traffic safety and safety from crime.

Record 25

Title: Physical activity benefits from taking your dog to the park

Author(s): Veitch, J (Veitch, Jenny)[1] ; Christian, H (Christian, Hayley)[2] ; Carver, A (Carver, Alison)[3] ; Salmon, J (Salmon, Jo)[1]

Source: LANDSCAPE AND URBAN PLANNING Volume: 185 Pages: 173-179 DOI: 10.1016/j.landurbplan.2019.02.013 Published: MAY 2019 Document Type:Article

Abstract: Dog walking is an important source of physical activity and local parks are an important setting for dog walking. Park visitation characteristics of dog walkers is largely unknown. Using data from self- and proxy-report surveys completed by adults living near two parks in Melbourne, Australia in April-May 2013, this study examined the frequency and duration of park visits and intensity and duration of park-based physical activity among adults and children who visited parks with a dog compared with those who visited parks without a dog. The sample included 1187 adults (49 years, SD:13.3) and 755 children (9 years, SD:3.6). Adults (OR = 2.71, 95% CI:1.99, 3.70) and children (OR = 1.63, 95% CI:1.09, 2.44) were more likely to visit parks more frequently; adults were less likely to visit for a longer duration on weekends (OR = 0.58, 95% CE0.43, 0.77); and children were less likely to spend more time being active (- 9.22, 95% CI: - 16.74, -1.70) when visiting the park with a dog versus without a dog. Adults who visited with a dog were also less likely to spend 1 + hours in the park on weekdays than < 30 min (RRR = 0.53, 95% CI:0.33, 0.85) and more likely to engage in moderate than sitting/light-intensity activity (RRR = 2.30, 95% CI:1.69, 3.15). Children who visited with a dog were less likely to engage in vigorous than sitting/light-intensity activity (RRR = 0.39, 95% CI:0.16, 0.94). Adults and children who visit parks with a dog are more frequent park users therefore park access, design and amenity should support dog walkers and their engagement in physical activity.

Record 26

Title: Examining pedestrian satisfaction in gated and open communities: An integration of gradient boosting decision trees and impact-asymmetry analysis

Author(s): Dong, W (Dong, Wei)[1,2] ; Cao, XY (Cao, Xinyu)[3] ; Wu, XY (Wu, Xinyi)[3] ; Dong, Y (Dong, Yu)[1,2]

Source: LANDSCAPE AND URBAN PLANNING Volume: 185 Pages: 246-257 DOI: 10.1016/j.landurbplan.2019.02.012 Published: MAY 2019 Document Type:Article

Abstract: This study compares satisfaction with walkability of residents in gated and open communities in Harbin, China. The results of gradient boosting decision trees show that neighborhood attributes associated with satisfaction with walkability differ between gated and open communities. Neighborhood leisure activities, space, and street furniture are the most influential attributes for walkability in gated communities. Sidewalk quality, neighborhood safety, and leisure activities are important for open communities. Using impact-asymmetry analysis, this study illustrates the nonlinear effects of neighborhood attributes on pedestrian satisfaction and classifies these attributes into frustrators, dissatisfiers, hybrids, satisfiers and delighters. By integrating attribute classification and their performance, we found that social interaction is an improvement priority for gated communities and that neighborhood space and street furniture could be enhanced given resource availability. For open communities, we recommend that planners improve outdoor facilities, canopy and shelter, and open space.

Record 27

Title: Outdoor physical activity bears multiple benefits to health and society

Author(s): Manferdelli, G (Manferdelli, Giorgio)[1] ; La Torre, A (La Torre, Antonio)[1,2] ; Codella, R (Codella, Roberto)[1,3]

Source: JOURNAL OF SPORTS MEDICINE AND PHYSICAL FITNESS Volume: 59 Issue: 5 Pages: 868-879 DOI: 10.23736/S0022-4707.18.08771-6 Published: MAY 2019 Document Type:Review

Abstract: INTRODUCTION: Cutting-edge technologies and the rapid urbanization have led to several advantages for mankind and society. however such benefits have been accompanied with the alarming diffusion of sedentary lifestyle disorders, metabolic diseases. major depression and socialization problems, affecting global economy dramatically. The pandemic expansion of chronic diseases is associated with physical inactivity. During the last decade, numerous cities and organizations worldwide have started to adopt strategies aimed at improving outdoor physical activity levels in city residents. EVIDENCE ACQUISITION: A systematic review focusing on the effects of regular outdoor sports and physical activities across all ages was conducted through multiple databases, according to the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) standards. EVIDENCE SYNTHESIS: Performing outdoor sports and physical activities may bear social, psychological and physiological benefits. Preventive effects are similarly documented in youth and seniors towards several morbid conditions: vitamin D deficiency, multiple sclerosis, osteoporosis and myopia. CONCLUSIONS: Giving the beneficial effects of outdoor sports and physical activities, promotion strategies should be strongly advocated and developed nationally and globally. Likewise, dedicated research areas should inspire guidelines for the promotion of various outdoor activities - a good practice for the social scenario and the healthcare system.

Record 28

Title: Associations of green space metrics with health and behavior outcomes at different buffer sizes and remote sensing sensor resolutions

Author(s): Su, JG (Su, Jason G.)[1] ; Dadvand, P (Dadvand, Payam)[2,3,4] ; Nieuwenhuijsen, MJ (Nieuwenhuijsen, Mark J.)[2,3,4] ; Bartoll, X (Bartoll, Xavier)[5,6] ; Jerrett, M (Jerrett, Michael)[7]

Source: ENVIRONMENT INTERNATIONAL Volume: 126 Pages: 162-170 DOI: 10.1016/j.envint.2019.02.008 Published: MAY 2019 Document Type:Article

Abstract: Satellite data is increasingly used to characterize green space for health outcome studies. Literature suggests that green space within 500 m of home is often used to represent neighborhood suitable for walking, air pollution and noise reduction, and natural healing. In this paper, we used satellite data of different spatial resolutions to derive normalized difference vegetation index (NDVI), an indicator of surface greenness, at buffer distances of 50, 100, 250 and 500 m. Data included those of 2 m spatial resolution from WorldView2, 5 m resolution from RapidEye and 30 m resolution from Landsat. We found that, after radiometric calibrations, the RapidEye and WorldView2 sensors had similar NDVI values, while Landsat imagery tended to have greater NDVI; however, these sensors showed similar vegetation distribution: locations high in vegetation cover being high in NDVI, and vice versa. We linked the green space estimates to a health survey, and identified that higher NDVI values were significantly associated with better health outcomes. We further investigated the impacts of buffer size and sensor spatial resolution on identified associations between NDVI and health outcomes. Overall, the identified health outcomes were similar across sensors of different spatial resolutions, but a mean trend was identified in bigger buffer size being associated with greater health outcome.

Record 29

Title: School policies, built environment and practices for non-communicable disease (NCD) prevention and control in schools of Delhi, India

Author(s): Bassi, S (Bassi, Shalini)[1] ; Gupta, VK (Gupta, Vinay K.)[1] ; Park, M (Park, MinHae)[2] ; Nazar, GP (Nazar, Gaurang P.)[1] ; Rawal, T (Rawal, Tina)[1] ; Bhaumik, S (Bhaumik, Soumyadeep)[1] ; Kochhar, KP (Kochhar, Kanwal Preet)[3] ; Arora, M (Arora, Monika)[1]

Source: PLOS ONE Volume: 14 Issue: 4 Article Number: e0215365 DOI: 10.1371/journal.pone.0215365
Published: APR 18 2019 Document Type:Article

Abstract: Objective To assess school policies, built environment and practices for prevention and control of non-communicable diseases in schools of Delhi, India. Methods School built environments and policies were assessed using a structured observation checklist in 10 private and 9 government schools which were randomly selected from all 184 co-educational schools with primary to senior secondary level education in Delhi, India. A self-administered questionnaire was also completed by teachers from each school (n = 19) to capture information specific to school policies. Surveys were also conducted with parent of students in class II (aged 6-7 years; n = 574) and student in class XI (aged 15-16 years, n = 755) to understand school practices. Results The majority of government (88.9%; n = 8) and private (80%; n = 8) schools reported having comprehensive school health policy. In terms of specific health behaviours, policies related to diet and nutrition in government schools were mostly restricted to primary levels with provision of the mid-day meal programme. All schools had two physical education periods per week of about 45-50 minutes. Most schools were compliant with tobacco-free school guidelines (n = 15 out of 19) and had alcohol control policies (n = 13 out of 19). Parent and student reports of practices indicated that school policies were not consistently implemented. Conclusion Most schools in Delhi have policies that address health behaviours in students, but there was considerable variation in the types and number of policies and school environments. Government schools are more likely to have policies in place than private schools. Further work is needed to evaluate how these policies are implemented and to assess their impact on health outcomes.

Record 30

Title: Cognitive and Sensory Dimensions of Older People's Preferences of Outdoor Spaces for Walking: A Survey Study in Ireland

Author(s): Cassarino, M (Cassarino, Marica)[1] ; Bantry-White, E (Bantry-White, Eleanor)[2] ; Setti, A (Setti, Annalisa)[1]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 8 Article Number: 1340 DOI: 10.3390/ijerph16081340 Published: APR 2 2019 Document Type:Article

Abstract: Background: Physical exercise, particularly walking, benefits healthy ageing. Understanding the environmental circumstances in which exercise occurs is crucial to the promotion of physical activity in older age. Most studies have focused on the structural dimensions of environments that may foster walking; however, individual differences in how older people perceive and interact with outdoor spaces need further attention. This study explored the cognitive and sensory dimensions of preferences of outdoor spaces for walking. Methods: We invited 112 healthy community-dwelling people aged 60 years to complete a survey to test associations between walking preferences and cognitive/sensory vulnerability. A subsample also completed focus groups/walk along interviews to explore qualitatively the cognitive/sensory reasons for outdoor walking preferences. Results: While most participants indicated a preference for outdoor spaces that offer variety and greenery, we observed a complex association between individual cognitive/sensory needs (stimulation seeking vs. avoidance), preferences for social interactions, and the place of residence urbanity level. Furthermore, walking preferences varied based on the purpose of the walk (recreation vs. transportation). Conclusions: Our findings support an ecological approach to understanding determinants of physical activity in older age, which consider the interaction between individual cognitive processing and the environment.

Record 31

Title: Data Collection Instruments for Obesogenic Environments in Adults: A Scoping Review

Author(s): Martinez-Garcia, A (Martinez-Garcia, Alba)[1] ; Trescastro-Lopez, EM (Maria Trescastro-Lopez, Eva)[1] ; Galiana-Sanchez, ME (Eugenia Galiana-Sanchez, Maria)[1] ; Pereyra-Zamora, P (Pereyra-Zamora, Pamela)[1]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 8 Article Number: 1414 DOI: 10.3390/ijerph16081414 Published: APR 2 2019 Document
Type:Review

Abstract: The rise in obesity prevalence has increased research interest in the obesogenic environment and its influence on excess weight. The aim of the present study was to review and map data collection instruments for obesogenic environments in adults in order to provide an overview of the existing evidence and enable comparisons. Through the scoping review method, different databases and webpages were searched between January 1997 and May 2018. Instruments were included if they targeted adults. The documents were categorised as food environment or built environment. In terms of results, 92 instruments were found: 46 instruments measuring the food environment, 42 measuring the built environment, and 4 that characterised both environments. Numerous diverse instruments have been developed to characterise the obesogenic environment, and some of them have been developed based on existing ones; however, most of them have not been validated and there is very little similarity between them, hindering comparison of the results obtained. In addition, most of them were developed and used in the United States and were written in English. In conclusion, there is a need for a robust instrument, improving or combining existing ones, for use within and across countries, and more sophisticated study designs where the environment is contemplated in an interdisciplinary approach.

Record 32

Title: Children's Transport Built Environments: A Mixed Methods Study of Associations between Perceived and Objective Measures and Relationships with Parent Licence for Independent Mobility in Auckland, New Zealand

Author(s): Smith, M (Smith, Melody)[1] ; Amann, R (Amann, Rebecca)[1] ; Cavadino, A (Cavadino, Alana)[1] ; Raphael, D (Raphael, Deborah)[1] ; Kearns, R (Kearns, Robin)[2] ; Mackett, R (Mackett, Roger)[3] ; Mackay, L (Mackay, Lisa)[4] ; Carroll, P (Carroll, Penelope)[5] ; Forsyth, E (Forsyth, Euan)[2] ; Mavoa, S (Mavoa, Suzanne)[6] ; Zhao, JF (Zhao, Jinfeng)[1] ; Ikeda, E (Ikeda, Erika)[4] ; Witten, K (Witten, Karen)[5]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 8 Article Number: 1361 DOI: 10.3390/ijerph16081361 Published: APR 2 2019 Document
Type:Article

Abstract: Children's independent mobility is declining internationally. Parents are the gatekeepers of children's independent mobility. This mixed methods study investigates whether parent perceptions of the neighbourhood environment align with objective measures of the neighbourhood built environment, and how perceived and objective measures relate to parental licence for children's independent mobility. Parents participating in the Neighbourhood for Active Kids study (n = 940) answered an open-ended question about what would make their neighbourhoods better for their child's independent mobility, and reported household and child demographics. Objective measures of the neighbourhood built environment were generated using geographic information systems. Content analysis was used to classify and group parent-reported changes required to improve their neighbourhood. Parent-reported needs were then compared with objective neighbourhood built environment measures. Linear mixed modelling examined associations between parental licence for independent mobility and (1) parent neighbourhood perceptions; and (2) objectively assessed neighbourhood built environment features. Parents identified the need for safer traffic environments. No significant differences in parent reported needs were found by objectively assessed characteristics. Differences in odds of reporting needs were observed for a range of socio-demographic characteristics. Parental licence for independent mobility was only associated with a need for safer places to cycle (positive) and objectively assessed cycling infrastructure (negative) in adjusted models. Overall, the study findings indicate the importance of safer traffic environments for children's independent mobility.

Record 33

Title: Built Environment and Health Behaviors: Deconstructing the Black Box of Interactions: A Review of Reviews

Author(s): Travert, AS (Travert, Anne-Sophie)[1,2] ; Annerstedt, KS (Annerstedt, Kristi Sidney)[2] ; Daivadanam, M (Daivadanam, Meena)[2,3]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 8 Article Number: 1454 DOI: 10.3390/ijerph16081454 Published: APR 2 2019 Document Type:Review

Abstract: A review of reviews following a scoping review study design was conducted in order to deconstruct the black box of interactions between the built environment and human behaviors pertaining to physical activity and/or diet. In the qualitative analysis 107 records were included, 45 of which were also coded. Most review papers confirmed the influence of the built environment on the behaviors of interest with some noting that a same built environment feature could have different behavioral outcomes. The conceptual model developed sheds light on these mixed results and brings out the role of several personal and behavioral factors in the shift from the measured to the perceived built environment. This shift was found to shape individuals' behaviors critically and to have the power of redefining the strength of every interaction. Apart from its theoretical relevance, this model has high practical relevance especially for the design and implementation of interventions with a behavioral component. Intervention researchers can use the model developed to identify and label the built environment and individual factors that can be measured objectively or perceived as facilitators, concurrent options and barriers, in order to develop comprehensive and multi-component intervention strategies.

Record 34

Title: Spatial Analysis of Built Environment Risk for Respiratory Health and Its Implication for Urban Planning: A Case Study of Shanghai

Author(s): Wang, L (Wang, Lan)[1] ; Sun, WY (Sun, Wenyao)[1] ; Zhou, KC (Zhou, Kaichen)[1] ; Zhang, ML (Zhang, Minlu)[2] ; Bao, PP (Bao, Pingping)[2]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 8 Article Number: 1455 DOI: 10.3390/ijerph16081455 Published: APR 2 2019 Document Type:Article

Abstract: Urban planning has been proven and is expected to promote public health by improving the built environment. With a focus on respiratory health, this paper explores the impact of the built environment on the incidence of lung cancer and its planning implications. While the occurrence of lung cancer is a complicated and cumulative process, it would be valuable to discover the potential risks of the built environment. Based on the data of 52,009 lung cancer cases in Shanghai, China from 2009 to 2013, this paper adopts spatial analytical methods to unravel the spatial distribution of lung cancer cases. With the assistance of geographic information system and Geo-Detector, this paper identifies certain built environments that are correlated with the distribution pattern of lung cancer cases in Shanghai, including the percentage of industrial land (which explains 28% of the cases), location factors (11%), and the percentages of cultivated land and green space (6% and 5%, respectively). Based on the quantitative study, this paper facilitates additional consideration and planning intervention measures for respiratory health such as green buffering. It is an ecological study to illustrate correlation that provides approaches for further study to unravel the causality of disease incidence and the built environment.

Record 35

Title: Perceived Neighborhood Environment and Its Association with Health Screening and Exercise Participation amongst Low-Income Public Rental Flat Residents in Singapore

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Jaime][6] ; Lee, S (Lee, Shannon)[6] ; Oen, K (Oen, Kellynn)[6] ; Koh, CHG (Koh, Choon Huat Gerald)[7]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 8 Article Number: 1384 DOI: 10.3390/ijerph16081384 Published: APR 2 2019 Document Type:Article

Abstract: Background: In Singapore, an Asian city-state, more than 80% live in public housing. While the majority (90%) own their homes, a needy minority lives in rental flats. Public rental flats are built in the same location as owner-occupied blocks. We evaluated factors associated with perceptions of the neighborhood environment and its association with exercise and health screening participation. Methods: Logistic regression was used to identify associations between perceptions of the neighborhood environment (overall perceived neighborhood disadvantage, safety, and convenience) and sociodemographic factors, as well as exercise and screening participation, amongst residents aged 60 years in two Singaporean public housing precincts in 2016. Results: Our response rate was 62.1% (528/800). Staying in a rental flat independently was associated with increased neighborhood disadvantage (adjusted odds ratio, aOR = 1.58, 95%CI = 1.06-2.35). Staying in a stand-alone block (as opposed to staying in a mixed block comprised of both rental and owner-occupied units) was associated with perceptions of a poorer physical environment (aOR = 1.81, 95%CI = 1.22-2.68) and lower perceived proximity to recreational areas (aOR = 1.14, 95%CI = 1.04-1.25). Perceptions of neighborhood disadvantage were independently associated with reduced exercise participation (aOR = 0.67, 95%CI = 0.45-0.98) and reduced participation in diabetes screening (aOR = 0.63, 95%CI = 0.41-0.95). Conclusion: Despite sharing the same built environment, differences in the perception of the neighborhood environment between low-socioeconomic status (SES) and high-SES communities persist. Perceived neighborhood disadvantage is associated with lower participation in regular exercise and diabetes screening.

Record 36

Title: Walkability Assessment in a Rapidly Urbanizing City and Its Relationship with Residential Estate Value

Author(s): Zhang, JY (Zhang, Jingyuan)[1] ; Tan, PY (Tan, Puay Yok)[1] ; Zeng, H (Zeng, Hui)[2,3] ; Zhang, Y (Zhang, Ye)[1]

Source: SUSTAINABILITY Volume: 11 Issue: 8 Article Number: 2205 DOI: 10.3390/su11082205
Published: APR 2 2019 Document Type:Article

Abstract: Walkability has increasingly been recognized as an important factor for sustainable urban development that, however, has seldom been investigated in rapid urbanizing cities, especially in the Asian context. This paper assessed walkability in Futian District in the central area of Shenzhen, which has undergone very rapid urbanization within a short period of time. Walkability was assessed for 2013 and 2018 using a walkability index adapted from Walk Score. It was compared with housing prices of 215 randomly selected residential buildings, to further explore the relationships between walkability and residential estate value, provided as one practical application of the assessment of walkability in urban management. Our results show that Futian District has low walkability level, although walkability has been generally improved from 2013 to 2018. A high spatial variation of walkability level within this area was observed in both years. Overall, there was a negative relationship between walkability and housing prices (significant only in 2018), which is inconsistent with studies elsewhere. The results suggest that the housing prices in Futian District are more strongly influenced by other factors rather than by walkability. In addition, the ability of the walkability model to explicitly delineate spatial variation of walkability level makes it a powerful tool to be applied in urban planning and management. Results of this study also have practical applications, which can be used as a reference for residents' home selection and enable them to make informed decisions in selecting walkable neighborhoods with acceptable prices.

Record 37

Title: Criteria Influencing Pedestrian-Friendliness of First/Last Mile Transit Journey using Analytical Network Process (ANP) Group Judgement

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Source: AKADEMIKA Volume: 89 Issue: 1 Pages: 3-15 DOI: 10.17576/akad-2019-8901-01 Published: APR 2019 Document Type:Article

Abstract: The pedestrian-friendliness of the first/last mile (FLM) transit journey is one of the keys in influencing the quality of transit services. The demands of transit riders are increasing as they have started to ask for more than just accessibility which includes a good walking environment to access the service. Most local governments are aware of this as many of them have the guidelines in planning for a walkable transit services. However, they need to prioritise the criteria influencing pedestrian-friendliness accordingly. This paper proposes a framework for evaluating the priorities of criteria influencing pedestrian-friendliness by using Analytical Network Process (ANP) which relies on group judgement from experts who have wide knowledge and experience within the scope of the study. It can be conducted in six stages which are (1) determining criteria influencing pedestrian-friendliness (2) developing ANP model of the criteria and their dependencies, (3) obtaining experts judgement, (4) aggregating the criteria 's priorities, (5) deriving group judgement of the criteria 's priorities, and (6) ranking the criteria accordingly. In the end, this study will suggest the priorities for criteria influencing pedestrian-friendliness which can be used as reference in planning for walking environment to access transit services. This study highlighted nineteen criteria that could be used in representing the pedestrian-friendliness of FLM. Based on the analysis, it is suggested that from the nineteen criteria, the presence of signage showing direction is the most important criterion followed by roofed walkway, convenience in term of walking time, access to publicparks and presence of traffic lights.

Record 38

Title: Community-engaged development of a GIS-based healthfulness index to shape health equity solutions

Author(s): Sadler, RC (Sadler, Richard C.)[1] ; Hippensteel, C (Hippensteel, Christopher)[1] ; Nelson, V (Nelson, Victoria)[1] ; Greene-Moton, E (Greene-Moton, Ella)[1] ; Furr-Holden, CD (Furr-Holden, C. Debra)[1]

Source: SOCIAL SCIENCE & MEDICINE Volume: 227 Pages: 63-75 Special Issue: SI DOI: 10.1016/j.socscimed.2018.07.030 Published: APR 2019 Document Type:Article

Abstract: Addressing health disparities requires both community engagement and an understanding of the social determinants of health. Although elements of the built environment can influence behavior change in public health interventions, such determinants have not been explicitly teased out via participatory mapping. An opportunity exists to integrate community voice in the development of such metrics. To fill this gap and inform the deployment of public health interventions in the Flint (USA) Center for Health Equity Solutions (FCHES), we created a means of assessing spatially-varying community needs and assets in a geographic information system (GIS), what we refer to as a healthfulness index. We engaged community and academic partners in their expert opinions on features of Flint's built environment that may promote or inhibit healthy behaviors via a multiple-criteria decision analysis framework. Experts selected from and ranked 29 variables in 6 categories (including amenities, environment, greenspace, housing, infrastructure, and social issues) using the analytic hierarchy process. The resulting matrices of expert opinions were aggregated and appended as weights for each variable's corresponding map layer. When combined through map algebra, composite scores yield spatially-varying healthfulness indices which signal any neighborhoods relative health promoting qualities (along a 0-100 scale). Results varied substantially across Flint, with the middle belt scoring highest and older neighborhoods in the northeast and north center of the city scoring lowest. Scores were aggregated to 38 Flint neighborhoods; for each of two project-specific indices, these ranged from lows of 38.7 (Hilborn Park) and 41.8 (Columbia Heights) to highs of 52.9 (College Cultural) and 58.0 (University Ave Corridor). We hypothesize that even when controlling for

individual-level factors we will measure better and more sustained behavior change among participants living in neighborhoods with high healthfulness scores. Future work will examine this hypothesis and determine the importance of such indices in other similar communities.

Record 39

Title: Examining longitudinal associations between the recreational physical activity environment, change in body mass index, and obesity by age in 8864 Yorkshire Health Study participants

Author(s): Hobbs, M (Hobbs, M.)[1,2] ; Griffiths, C (Griffiths, C.)[1] ; Green, MA (Green, M. A.)[3] ; Christensen, A (Christensen, A.)[1] ; McKenna, J (McKenna, J.)[1]

Source: SOCIAL SCIENCE & MEDICINE Volume: 227 Pages: 76-83 Special Issue: SI DOI: 10.1016/j.socscimed.2018.06.027 Published: APR 2019 Document Type:Article; Proceedings Paper View Journal Impact Conference Conference: 17th International Medical Geography Symposium (IMGS) Location: Angers, FRANCE Date: JUL 02-07, 2017

Abstract: The environment may lead to lower body mass index (BMI) and obesity risk by providing opportunities to be physically active. However, while intuitively appealing, associations are often inconsistent in direction and small scale. This longitudinal study examined if change in BMI and obesity was associated with the availability of physical activity (PA) facilities and parks and explored if these associations differed by age. Longitudinal data (n = 8,864, aged 18-86 years) were provided at baseline (wave I: 2010-2012) and follow up (wave II: 2013-2015) of the Yorkshire Health Study. BMI was calculated using self-reported height (cm) and weight (kg) (obesity = BMI \geq 30.00). To define availability, home addresses were geocoded based on postcode zone centroids and neighbourhood was defined as a 2 km radial buffer. PA facilities were sourced from Ordnance Survey Points of Interest (PoI) and parks were sourced from OpenStreetMap. Environmental data temporally matched individual-level baseline data collection. PA facilities (b = 0.006 [-0.015, 0.0031] and parks (b = 0.001 [-0.015, 0.013]) at baseline were not associated with change in BMI. Change in obesity was unrelated to parks (OR = 0.994 [0.975, 1.015]) and while PA facilities were related (OR = 0.979 [0.965, 0.993]), effects were small. A combined measure of the recreational PA environment including parks and PA facilities was unrelated to change in BMI and obesity. Despite this, statistically significant interactions were found for both PA facilities, parks, and change in obesity by age. Based on the premise that an individual's mobility varies with age, and although effects were small, this offers tentative evidence which suggests it may be useful for policymakers in Public Health and Planning to consider the impact of environmental interventions across the life course.

Record 39

Title: Correlates of Discordance between Perceived and Objective Distances to Local Fruit and Vegetable Retailers

Author(s): Baldock, KL (Baldock, Katherine L.)[1] ; Paquet, C (Paquet, Catherine)[1] ; Howard, NJ (Howard, Natasha J.)[2,3] ; Coffee, NT (Coffee, Neil T.)[4] ; Taylor, AW (Taylor, Anne W.)[5] ; Daniel, M (Daniel, Mark)[4,6,7]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH Volume: 16 Issue: 7 Article Number: 1262 DOI: 10.3390/ijerph16071262 Published: APR 1 2019 Document Type:Article

Abstract: Background: Perceptions of neighbourhood attributes such as proximity of food retailers that are discordant with objective measures of the same are associated with poor health behaviours and weight gain. Factors associated with discordant perceptions are likely relevant to planning more effective interventions to improve health. Purpose: Analysis of cross-sectional relationships between individual and neighbourhood factors and overestimations of walking distances to local fruit/vegetable retailers (FVR). Methods: Perceived walking times, converted to distances, between participant residences and FVR were compared with objectively-assessed road network distances calculated with a Geographic Information System for n = 1305 adults residing in Adelaide, South Australia. Differences between perceived and

objective distances were expressed as overestimated' distances and were analysed relative to perceptions consistent with objective distances. Cross-sectional associations were evaluated between individual socio-demographic, health, and area-level characteristics and overestimated distances to FVR using multilevel logistic regression. Results: Agreement between objective and perceived distances between participants' residence and the nearest FVR was only fair (weighted kappa = 0.22). Overestimated distances to FVR were positively associated with mental well-being, and were negatively associated with household income, physical functioning, sense of community, and objective distances to greengrocers. Conclusions: Individual characteristics and features of neighbourhoods were related to overestimated distances to FVR. Sense of connectivity and shared identity may shape more accurate understandings of local resource access, and offer a focal point for tailored public health initiatives that bring people together to achieve improved health behaviour.

Record 40

Title: Social Inequalities in Environmental Resources of Green and Blue Spaces: A Review of Evidence in the WHO European Region

Author(s): Schule, SA (Schuele, Steffen Andreas)[1,2] ; Hiltz, LK (Hiltz, Lisa Karla)[1,2] ; Dreger, S (Dreger, Stefanie)[1,2] ; Bolte, G (Bolte, Gabriele)[1,2]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 7 Article Number: 1216 DOI: 10.3390/ijerph16071216 Published: APR 1 2019 Document Type:Review

Abstract: Residential green and blue spaces and their potential health benefits have received increasing attention in the context of environmental health inequalities, because an unequal social distribution of these resources may contribute to inequalities in health outcomes. This systematic review synthesised evidence of environmental inequalities, focusing on availability and accessibility measures of green and blue spaces. Studies in the World Health Organisation (WHO) European Region published between 2010 and 2017 were considered for the review. In total, 14 studies were identified, where most of them (n = 12) analysed inequalities of green spaces. The majority had an ecological study design that mostly applied deprivation indices on the small area level, whereas cross-sectional studies on the individual level mostly applied single social measures. Ecological studies consistently showed that deprived areas had lower green space availability than more affluent areas, whereas mixed associations were found for single social dimensions in cross-sectional studies on the individual level. In order to gain more insights into how various social dimensions are linked to the distribution of environmental resources within the WHO European Region, more studies are needed that apply comparable methods and study designs for analysing social inequalities in environmental resources.

Record 41

Title: The urban regeneration of west-bay, business district of Doha (State of Qatar): A transit-oriented development enhancing livability

Author(s): Furlan, R (Furlan, Raffaello)[1] ; Petruccioli, A (Petruccioli, Attilio)[1,2] ; Major, MD (Major, Mark David)[1] ; Zaina, S (Zaina, Sara)[1] ; Zaina, S (Zaina, Samar)[1,3] ; Al Saeed, M (Al Saeed, Mahmoud)[1,4] ; Saleh, D (Saleh, Dina)[1,5]

Source: JOURNAL OF URBAN MANAGEMENT Volume: 8 Issue: 1 Pages: 126-144 DOI: 10.1016/j.jum.2018.10.001 Published: APR 2019 Document Type:Article

Abstract: Doha, the capital of the State of Qatar, has faced enormous economic growth and rapid urban transformation over the last few decades. More recently, this has been accentuated by the construction of major urban public transit systems in the State and a desire to implement the Transit-Oriented Development (TOD) model in new developments and/or urban regeneration projects along the new 'Doha Metro' rail network. A TOD is a mixed-use area planned to maximize access to public transport and encourage transit ridership. Scholars argue that TODs encourage sustainable urbanism via enhancement

of livability by better integrating transportation and land-use strategies in urban form. This makes it critical to better understand the challenges and benefits that TODs offer for models of urbanism in formulating strategies and guidelines for the planning of sustainable settlements. This study focuses on one major new transit hubs in Qatar: West Bay, the waterfront business district of Doha, and its surrounding neighborhood. The aim of the research study is to evaluate the extent to which the new West Bay TOD will impact livability in the district and surrounding neighborhood. The findings provide a guide for the design and implementation of the TOD model in other districts of Doha to enhance livability for residents and citizens.

Record 42

Title: What is the role of weather, built-environment and accessibility geographical characteristics in influencing travelers' experience?

Author(s): Abenoza, RF (Abenoza, Roberto F.)[1] ; Liu, CX (Liu, Chengxi)[2] ; Cats, O (Cats, Oded)[3,4] ; Susilo, YO (Susilo, Yusak O.)[1]

Source: TRANSPORTATION RESEARCH PART A-POLICY AND PRACTICE Volume: 122 Pages: 34-50 DOI: 10.1016/j.tra.2019.01.026 Published: APR 2019 Document Type:Article

Abstract: We examine the effect of weather, accessibility and built-environment characteristics on overall travel experience as well as the experience with the latest trips. These are factors that are often disregarded in the travel satisfaction literature even though they are believed to largely influence the first mile of the door-to-door trip. This study fills a research gap in investigating all these factors by using, amongst other, a relatively large travel satisfaction survey from years 2009 to 2015 and by focusing on urban and peri-urban geographical contexts, the city and county of Stockholm (Sweden), respectively. The ordered logit model results show that county dwellers living close to a metro station and in well linked-to-all areas report higher overall travel satisfaction evaluations. In addition, precipitation and ground covered with snow have a negative influence on travel satisfaction. Our findings indicate that built-environment characteristics exert a rather weak influence on the travel experience, especially in the peri-urban context. However, some aspects such as living in areas with medium densities, low income and with high safety perceptions around public transport stations are associated with higher satisfaction levels. In turn, areas with single land uses are found to have lower travel satisfactions. These results are important for public transport planners and designers in devising measures to prevent and mitigate the negative outcome of some weather conditions and to conceive better designed transit oriented developments.

Record 43

Title: Inactive lifestyles in peri-urban Australia: A qualitative examination of social and physical environmental determinants

Author(s): Olson, JL (Olson, Jenny L.)[1] ; March, S (March, Sonja)[1] ; Brownlow, C (Brownlow, Charlotte)[1] ; Biddle, SJH (Biddle, Stuart J. H.)[1] ; Ireland, M (Ireland, Michael)[1]

Source: HEALTH PROMOTION JOURNAL OF AUSTRALIA Volume: 30 Issue: 2 Pages: 153-162 DOI: 10.1002/hpja.199 Published: APR 2019 Document Type:Article

Abstract: Issue addressed Australians living in peri-urban areas are insufficiently active, sedentary and experience poorer health than people in major cities. There are health benefits attributable to active lifestyles that could contribute to the improved health and well-being of this population. To support the adoption of active lifestyles, it is important to understand the unique context in which behaviour occurs. Methods The aim of this study was to identify characteristics of the social and physical peri-urban environment that may impact active lifestyles. Semi-structured interviews were conducted in peri-urban southern Queensland. Data were analysed by thematic analysis. Results The natural environment, weather, distance, accessibility and walkability were features of the physical environment relevant to active lifestyles. Social factors included social capital and crime. Activity-supportive characteristics (eg, community spirit) were identified, in addition to active lifestyle barriers (eg, lack of public transport). Conclusions Despite activity-supportive social and environmental characteristics, most participants

reported inactive lifestyles. The barriers to active lifestyles in peri-urban environments may negate these activity-supportive features. Some barriers are difficult to modify (eg, distance and accessibility). However, some may be alleviated through the adoption of activity-supportive policy and urban design (eg, pedestrian mobility infrastructure). So what? Strategies to support active lifestyles in peri-urban environments must take into account unmodifiable contextual barriers, whilst encouraging utilisation of existing activity-supportive infrastructure and resources. The enhancement of activity-supportive environments through improved neighbourhood walkability and the usability of public transport may encourage some peri-urban residents to undertake more active forms of transport and recreational physical activity.

Record 44

Title: Do satisfying walking and cycling trips result in more future trips with active travel modes? An exploratory study

Author(s): De Vos, J (De Vos, Jonas)[1] ; Schwanen, T (Schwanen, Tim)[2] ; Van Acker, V (Van Acker, Veronique)[1,3] ; Witlox, F (Witlox, Frank)[1]

Source: INTERNATIONAL JOURNAL OF SUSTAINABLE TRANSPORTATION Volume: 13 Issue: 3
Pages: 180-196 DOI: 10.1080/15568318.2018.1456580 Published: MAR 16 2019 Document Type:Article

Abstract: Previous studies have indicated that travel satisfaction - the experienced emotions during, and cognitive evaluation of, a trip - can be affected by travel mode choice and other trip characteristics. However, as satisfactory trips might improve a person's attitude towards the used mode, persons may be more likely to use that same mode for future trips of the same kind. Hence, a cyclical process between travel mode choice and travel satisfaction might occur. In this paper we begin to analyse this process-using a structural equation modelling approach on cross-sectional data-for people who engage in walking and cycling for leisure trips in the Belgian city of Ghent. The focus on walking and cycling reflects recent studies indicating that active travel is often associated with the highest levels of travel satisfaction. Results of this exploratory analysis offer tentative support for the idea of a cyclical process: the evaluation of walking and cycling trips positively affects the respondents' attitude towards the respective mode, which in turn has a positive effect on choosing that mode.

Record 45

Title: Improving Sustainability in Architectural Research: Biopsychosocial Requirements in the Design of Urban Spaces

Author(s): Santi, G (Santi, Giovanni)[1] ; Leporelli, E (Leporelli, Emanuele)[1] ; Di Sivo, M (Di Sivo, Michele)[1]

Source: SUSTAINABILITY Volume: 11 Issue: 6 Article Number: 1585 DOI: 10.3390/su11061585
Published: MAR 2 2019 Document Type:Article

Abstract: There is an ever increasing interest in identifying the links between architecture and public health and in how urban design can positively influence the latter. The psychology of sustainability and sustainable development represents an innovative research area as a recent contribution to sustainability science and its trans-disciplinary configuration. The research topic deals with the importance and the centrality of the user-centered approach in the observation of the relationships among mankind, technological systems, and built environments, for projects that guarantee the conditions of physical, mental, and social well-being. Starting from the plurality of different disciplinary sectors, from anthropometry and sociology to psychology, human experience and user's expectations are explored, understood, and systematized. The analysis of the relationship between health and urban design has allowed researchers to identify design strategies to improve the level of urban livability. The city of Pisa is the case study; mobility within the city is redefined through various levels of the use of space so that paths and areas of inclusion and socialization are re-valued, while new scenarios for some urban spaces open up. In this perspective, the design strategies synthetically follow two main directions: the re-appropriation of

these places by the citizens and, at the same time, the promotion of their well-being from both a physical and psychological point of view.

Record 46

Title: Census Tract Food Tweets and Chronic Disease Outcomes in the US, 2015-2018

Author(s): Huang, YR (Huang, Yuru)[1] ; Huang, DN (Huang, Dina)[1] ; Nguyen, QC (Nguyen, Quynh C.)[1]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 6 Article Number: 975 DOI: 10.3390/ijerph16060975 Published: MAR 2 2019 Document Type:Article

Abstract: There is a growing recognition of social media data as being useful for understanding local area patterns. In this study, we sought to utilize geotagged tweets specifically, the frequency and type of food mentions to understand the neighborhood food environment and the social modeling of food behavior. Additionally, we examined associations between aggregated food-related tweet characteristics and prevalent chronic health outcomes at the census tract level. We used a Twitter streaming application programming interface (API) to continuously collect similar to 1% random sample of public tweets in the United States. A total of 4,785,104 geotagged food tweets from 71,844 census tracts were collected from April 2015 to May 2018. We obtained census tract chronic disease outcomes from the CDC 500 Cities Project. We investigated associations between Twitter-derived food variables and chronic outcomes (obesity, diabetes and high blood pressure) using the median regression. Census tracts with higher average calories per tweet, less frequent healthy food mentions, and a higher percentage of food tweets about fast food had higher obesity and hypertension prevalence. Twitter-derived food variables were not predictive of diabetes prevalence. Food-related tweets can be leveraged to help characterize the neighborhood social and food environment, which in turn are linked with community levels of obesity and hypertension.

Record 47

Title: Assessing Spatial Accessibility to Hierarchical Urban Parks by Multi-Types of Travel Distance in Shenzhen, China

Author(s): Li, LJ (Li, Langjiao)[1] ; Du, QY (Du, Qingyun)[1,2,3,4] ; Ren, F (Ren, Fu)[1,2] ; Ma, XY (Ma, Xiangyuan)[1]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 6 Article Number: 1038 DOI: 10.3390/ijerph16061038 Published: MAR 2 2019 Document Type:Article

Abstract: Urban green spaces play a critical role in public health and human wellbeing for urban residents. Due to the uneven spatial distribution of urban green spaces in most of cities, the issue of the disparity between supply and demand has aroused public concern. In a case of Shenzhen, a modified Gaussian-based two-step floating catchment area (2SFCA) method is adopted to evaluate the disparity between park provision and the demanders in terms of accessibility at hierarchical levels under four types of distance (e.g., Euclidean distance, walking distance, bicycling distance, and driving distance), which is well aligned with hierarchical systems in urban green spaces in urban planning practice. By contrast and correlation analysis, among the four types of distance, the statistical correlations are relatively high between Euclidean distance and the other three. Nonetheless, the pattern of spatial accessibility under different type of travel distance is apparently variant. Accessibility calculated by Euclidean distance is overestimated relative to that of the other three, while the pattern of walking distance and bicycling distance is similar to each other. The choice of type of distance is worthy of caution when evaluating spatial accessibility by 2SFCA method. Results show that the accessibility to parks at all hierarchical levels is high particularly, particularly at the natural level. However, the disparity between the supply and demand is significant. The percentage of communities that have high population density but low park accessibility is over 40% (equivalent to

approximately 55% of the population). The finding may provide implications on access to urban greens paces for urban planners and authorities to develop effective planning strategies.

Record 48

Title: Growing Resilience through Interaction with Nature: Can Group Walks in Nature Buffer the Effects of Stressful Life Events on Mental Health?

Author(s): Marselle, MR (Marselle, Melissa R.)[1,2] ; Warber, SL (Warber, Sara L.)[3,4] ; Irvine, KN (Irvine, Katherine N.)[5]

Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH
Volume: 16 Issue: 6 Article Number: 986 DOI: 10.3390/ijerph16060986 Published: MAR 2 2019 Document Type:Article

Abstract: Nature-based activities have been used as therapeutic interventions for those experiencing stress and mental ill health. This study investigates whether group walks could be a nature-based intervention to foster resilience, by buffering the effects of recent stressful life events on mental health. An observational research design with propensity score-matched samples compared the mental health of individuals who did (Nature Group Walkers, n = 1081) or did not (Non-Group Walkers, n = 435) attend nature group walks. A sub-sample of Frequent Nature Group Walkers (at least once per week, n = 631) was also investigated. Data were analyzed using multiple regression with an interaction term. All analyses were controlled for age, gender, and recent physical activity. Results showed that neither nature group walking, nor doing this frequently, moderated the effects of stressful life events on mental health. Using a main effects model, the positive associations of group walks in nature were at a greater magnitude than the negative associations of stressful life events on depression, positive affect, and mental well-being, suggesting an 'undoing' effect of nature group walks. Group walking schemes in natural environments may be an important public health promotion intervention for mental health.

Record 49

Title: Association between food, physical activity, and social assistance environments and the body mass index of schoolchildren from different socioeconomic strata

Author(s): Rossi, CE (Rossi, Camila Elizandra)[1] ; de Fragas, HP (de Fragas, Hinnig Patricia)[1] ; Correa, EN (Correa, Elizabeth Nappi)[2] ; das Neves, J (das Neves, Janaina)[2] ; de Vasconcelos, FDG (Guedes de Vasconcelos, Francisco de Assis)[1]

Source: JOURNAL OF PUBLIC HEALTH Volume: 41 Issue: 1 Pages: E25-E34 DOI: 10.1093/pubmed/fdy086 Published: MAR 2019 Document Type:Article

Abstract: The aim of this article was to evaluate associations between body mass index (BMI) and use of and distance from subjects homes of elements of the food and physical activity environments and use of social assistance environment, in schoolchildren from 7 to 14 years living in Florianopolis (South Brazil), stratified by monthly family income. A cross-sectional study was conducted with a probabilistic sample of 2152 schoolchildren. Univariate and multivariate linear regression analyses were conducted to test for associations between BMI and the use of and distance from supermarkets, bakeries and farmers' markets; use of and distance from parks/playgrounds and football pitches; and use of health centers, Reference Centers for Social Assistance, instructional facilities, residents associations, religious groups and a Brazilian program for cash transfer. Overweight and obesity rates were 21.5 and 12.7%, respectively. Among schoolchildren from low-income families, living more than 11 min' walk from parks/playgrounds was associated with higher BMI (beta = 0.53; 95% CI = 0.33-0.73). In the high-income strata, a longer distance from home to football pitches was associated with lower BMI (beta = -0.49; 95% CI = -0.69; -0.29). Neither food nor social assistance environments were associated with BMI of schoolchildren, even when analyzed by income strata.

Record 50

Title: NEIGHBORHOOD SOCIAL COHESION AND WALKING LIMITATIONS IN ETHNICALLY DIVERSE OLDER LATINOS IN THE UNITED STATES

Author(s): Vasquez, E (Vasquez, Elizabeth)[1] ; Murillo, R (Murillo, Rosenda)[2] ; Echeverria, S (Echeverria, Sandra)[3]

Source: ETHNICITY & DISEASE Volume: 29 Issue: 2 Pages: 247-252 DOI: 10.18865/ed.29.2.247
Published: SPR 2019 Document Type:Article

Abstract: Walking is the most common form of physical activity and socially cohesive neighborhoods may provide the context for racially/ethnically diverse groups to maintain an active lifestyle, particularly at older ages. Among Latinos, the association between neighborhood cohesion and walking behaviors may additionally differ by Latino group. We examined the association between neighborhood social cohesion and walking limitations among Latinos overall and by specific Latino groups. We combined data from the 2013 to 2016 National Health Interview Survey (NHIS) and selected adults aged ≥ 60 years ($n = 3,716$). Walking limitations were assessed based on responses to the "experienced difficulty walking" survey question. Social cohesion was measured using four NHIS questions regarding neighborhood social cohesion. Logistic regression models were stratified by Latino subgroup. Mexican Americans represented the largest proportion of the sample (55%). Cubans had the highest proportion of individuals reporting high neighborhood social cohesion (51%), while Dominicans had the lowest proportion (29%). In the total sample, those with high and medium neighborhood social cohesion reported lower odds of walking limitations. Although tests for interaction were not statistically significant, stratified analyses showed that all Latino groups had lower odds of walking limitations if they lived in a high social cohesion neighborhood compared with low social cohesion neighborhoods. Our results suggest that neighborhood social cohesion is associated with walking limitations among diverse groups of older Latinos.