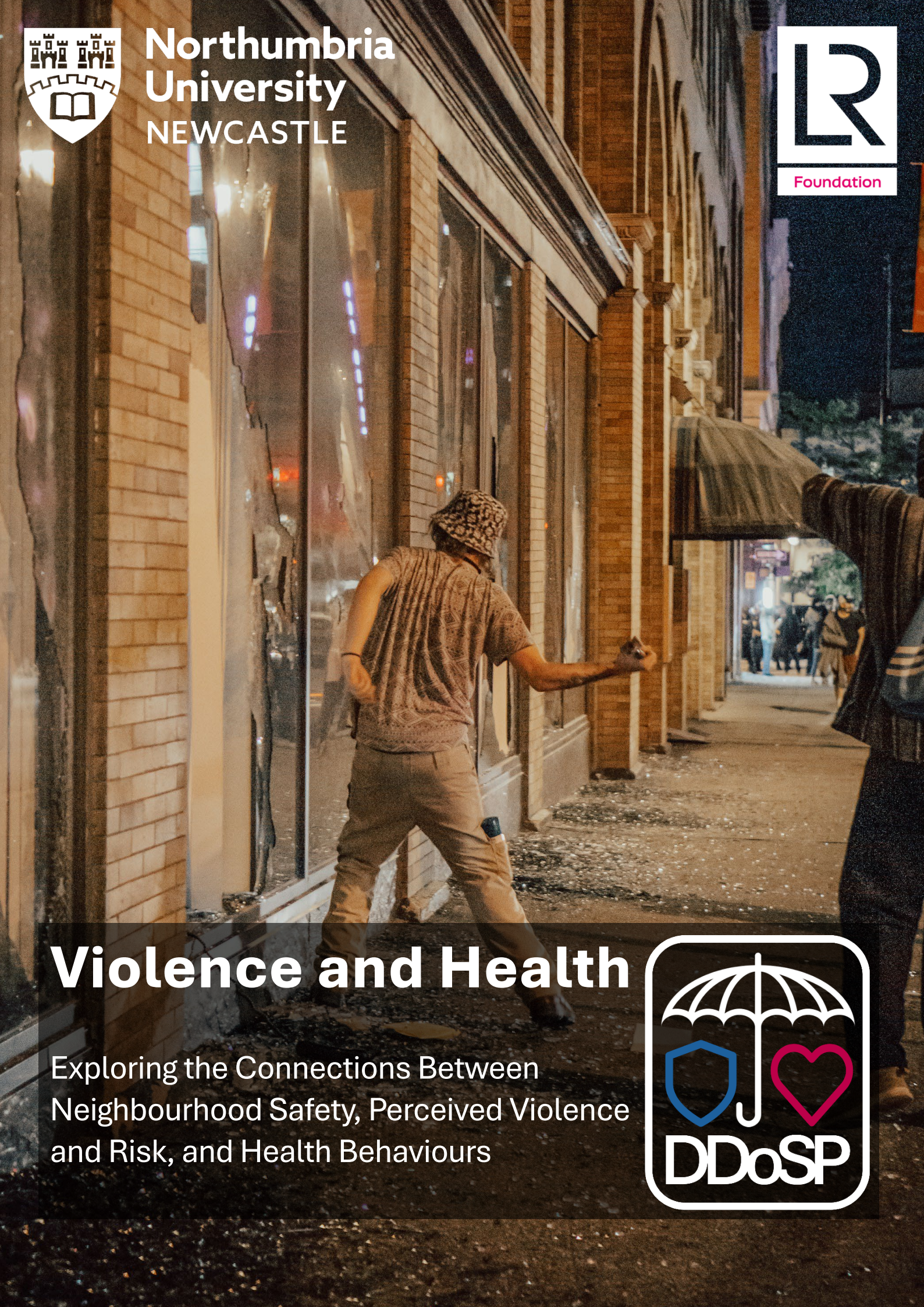

Northumbria University NEWCASTLE

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Violence and Health

Exploring the Connections Between Neighbourhood Safety, Perceived Violence and Risk, and Health Behaviours

DDoSP

Violence and Health

Overview

The relationship between violence-related safety concerns and health is complex and multifaceted, with significant implications for public health. This report considers existing evidence for this relationship, focusing on key affected groups, pathways between violence and health, and approaches to improving feelings of safety. Health behaviours are a critical pathway linking environmental exposures to violence with health outcomes. Capturing and understanding perceptions of risk from violence is essential for developing strategies that mitigate the negative health consequences of violence-related safety concerns.

Health Effects of Exposure to and Fear of Violence

Research indicates that perceptions of neighbourhood safety, community violence, fear of crime, and actual crime rates are linked to various health issues. These include obesity, mental health conditions, birth outcomes, cancer experiences, alcohol and substance misuse, mortality rates, and preventive health behaviours [1]. A systematic review of 20 years of research on the impact of neighbourhood factors on health in the US found that BMI/obesity and mental health were the most studied health outcomes, while socioeconomic status was the most commonly examined predictor [1]. While socioeconomic disadvantage underpins many crime-health relationships [2], perceived safety remains a significant predictor of health even after adjusting for deprivation [3]. An international study using data from 12 countries found that a perceived lack of neighbourhood safety, particularly concerning traffic or crime, was significantly associated with negative effects on adult BMI [4]. A Swedish survey of over 90,845 individuals conducted between 2004 and 2013 found that perceiving one's neighbourhood as unsafe predicted lower self-rated health, poorer psychological well-being, and more days of poor health and reduced work capacity [5]. Among various social and environmental safety indicators in a study of 9,656 Dutch residents, general neighbourhood safety had the strongest link to health [6].

Key Affected Groups

Children and Young Adults are adversely affected by exposure to community violence and a lack of neighbourhood safety, leading to both immediate and long-term physical and mental health issues. A global systematic review found that greater exposure to community violence was associated with increased symptoms of mental health disorders in adolescents (10-24 years)[7]. A further systematic review of community violence exposure among Black young adults (ages 18–29) in the US found that increased exposure predicted greater likelihood of substance misuse [8]. In addition to the psychological, cognitive, and behavioural impacts, exposure to violence also leads to significant physical health consequences for young people. Research has shown that it accelerates epigenetic aging, measured through salivary DNA in children aged 6-13 [9], and is associated with telomere erosion from ages 5 to 10 [10]. A systematic review found the strongest evidence linking violence exposure to health in children and adolescents related to cardiovascular issues and sleep disturbances, highlighting the need for further research on underlying mechanisms [11].

Older Adults are significantly impacted by perceived neighbourhood safety, which affects both their physical and psychological health. A systematic literature review of neighbourhood safety factors associated with US older adults' health-related outcomes found that overall

neighbourhood safety was closely linked to mental health and physical functioning [12]. Traffic-related safety was primarily associated with physical activity, while crime-related safety showed a more consistent connection to mental health and rates of walking [12]. A study of 18,043 older adults using the US Health and Retirement Study found that perceived neighbourhood safety was closely associated with their measure of 10-year functional decline (involving increased difficulty with daily living, mobility, and/or death)[13]. Studies have shown that lower feelings of safety are associated with increased depressive symptoms among older adults [14]. A cross-sectional study of 13,897 older adults in California found that perceived neighbourhood safety was significantly associated with psychological health, regardless of physical functioning [14].

Women and Girls are likely to perceive neighbourhood safety and the risk of exposure to violence differently from men and boys, resulting in distinct effects on health and wellbeing. In a study of 851 adolescents from the US, perceiving one's neighbourhood as unsafe and fearing violence at ages 14-15 predicted a deterioration in subjective health after 12 years among females but not males [15]. In a similar study of 681 African American youths, fear of neighbourhood violence at age 15 predicted an increase in BMI from ages 21 to 32 among females, but not males [16]. A study of 955 young adults (18-29 years) in Brazil found that increased perceptions of neighbourhood violence predicted poorer subjective health in women, but not men [17]. This suggests that women and girls may be more susceptible to the negative health effects of fear of violence or perceiving one's neighbourhood as unsafe.

Perceived vs. Actual Risks of Violence

It is important to consider the relationship between perceptions of safety, and objective measures of crime, violence, and neighbourhood safety. Understanding where perceptions diverge from objectively measured levels of risk can help guide appropriate initiatives and clarify whether perceived or actual safety has a greater influence on health behaviours and outcomes. The relationship between perceived and actual crime rates is complex and varies across different contexts. For example, in a study of 9,656 Dutch residents' perceptions of crime, the association between police-recorded crime and perceptions of neighbourhood crime rates was weak, except for violent crime [6]. Using data from the 6,995 adults in the New Zealand General Social Survey, actual crime rates predicted perceptions of safety when walking at night, with violent crimes involving a weapon being the strongest predictor [18]. Data from the American Housing Survey metro samples over 25 years found that violent crime was the strongest predictor of residents' perceptions of crime [19]. Among violent crimes, robbery and aggravated assault had the greatest impact on perceived crime levels [19]. This suggests that public health policies targeting experiences and perceptions of safety as a social determinant of health should prioritise areas with violent crime to enhance overall feelings of safety [6].

Evidence suggests that both perceived and actual rates of crime can discourage physical activity [20]. A meta-analysis of 16 cross-sectional studies found that feeling safe from crime was associated with 27% greater odds of increased physical activity, while those in high-crime areas had 28% lower odds [20]. Using data from the Household, Income and Labour Dynamics in Australia survey with 2,384 participants, perceived levels of crime were shown to negatively impact life satisfaction beyond the effects of actual crime [21].

Pathways Between Violence-Related Safety Concerns and Health

The links between violence, fear, neighbourhood environments, and health and well-being are complex, often indirect, and difficult to disentangle [2]. Fear of violence and a perceived lack of safety can directly influence **physiological stress responses**, which, when chronic, have long-term negative health effects. Living in an unsafe neighbourhood can create a situation of chronic

stress, potentially negatively impacting health and well-being [22]. Data from 1,687 participants from the Midlife Development in the United States study found that perceived neighbourhood safety was inversely associated with allostatic load (the cumulative strain on physiological systems caused by chronic stress exposure) even when controlling for objective neighbourhood conditions [23]. The pathway between fear of violence and physical health may also operate through other **mental health** issues and conditions. A meta-analysis of studies on the impact of objective and perceived neighbourhood crime on mental health found significant associations with rates of depression, anxiety, and psychological distress, including psychosis [3]. A recent umbrella review of systematic reviews investigating the relationships between physical and mental health highlights a significant bidirectional link between mental health disorders and physical diseases [24]. This review of evidence shows that mental health and behavioural disorders, particularly alcohol use disorders, depression, and schizophrenia, increase the risk of poor clinical outcomes in physical illnesses [24]. Consequently, the negative impact of neighbourhood safety on mental health is likely to influence physical health. Fear of crime and concerns around neighbourhood safety can also lead to **sleep problems**, which in turn affect overall health. A systematic review of literature on neighbourhood environments and sleep in children and adolescents found that while low socioeconomic status was the most commonly studied factor, the strongest evidence linked neighbourhood safety, crime, and violence to sleep outcomes, with 86% of those studies reporting significant associations [25].

A further pathway through which violence-related safety concerns impact health is through **individual health behaviours**. Using data from the China Family Panel Study with 5,259 adult respondents, it was found that health behaviours fully mediated the effects of perceived neighbourhood safety on physical health outcomes [26]. Better perceived neighbourhood environments significantly promoted physical activity and reduced sedentary behaviour, smoking, and drinking [26]. A study of 644 low-income Pittsburgh residents found that long-term exposure to crime was associated with higher BMI over time through decreased physical activity [27]. Understanding how neighbourhood safety perceptions influence health behaviours could help inform strategies to improve health outcomes in disadvantaged communities [28]. There is therefore a need to capture individuals' perceived sense of daily risk from violence and other key sources of risk in their local environments. Such measures may help identify those most vulnerable to the adverse health effects of unsafe neighbourhoods and guide strategies to mitigate these impacts.

Perceived Uncontrollable Mortality Risk

The Double Dividend of Safety, and supporting work, provides a valuable framework for understanding how perceptions of safety can shape health behaviours. The framework posits that reducing those risks which people are unable to mitigate for themselves will not only make people safer, but will also encourage healthier behaviours. The concept of Perceived Uncontrollable Mortality Risk (PUMR) refers to the portion of a person's risk of death that they believe cannot be reduced by altering their behaviour [29-32], and can help to explain health behaviour differences driven by fear of violence and other safety concerns. Greater PUMR has consistently been shown to predict lower levels of health effort [29, 33-35]. This supports the idea that increased exposure to risks that are beyond personal control can reduce motivation to engage in positive health behaviours. In the context of violence-related safety concerns, environmental cues of uncontrollable risk can take many forms. The presence of violent, aggressive, anti-social, or disorderly behaviours can heighten perceptions of uncontrollable risk. Similarly, features of the built environment such as vandalised property, poor lighting, or a lack of visible security, may evoke feelings of danger. These cues may be explicit and immediate or operate subtly below conscious awareness. The Lloyd's Register Foundation World Risk Poll has repeatedly asked people worldwide to identify the greatest perceived risks to their safety, and each time, crime and

violence has ranked second (after transport safety)[36]. While there is a growing body of evidence linking PUMR to health effort in general, the specific relationship between violence-related safety concerns, PUMR, and health behaviours remains underexplored. This represents a critical opportunity to expand our understanding of how violence influences health through its impact on PUMR, and subsequently health behaviours. For a more detailed explanation of the origins of the double dividend of safety concept, please refer to our related 'Theory and Evidence' document available at **doubledividendofsafety.org**.

Approaches to Improving Feelings of Safety

Commonly proposed approaches for reducing violence-related safety concerns include community policing (through increased police visibility and positive police-citizen partnerships), and modifying features of the built environment (including enhanced lighting and improved urban design) [37, 38]. However, much of the evidence for the effectiveness of these initiatives for improving feelings of safety and reducing fear of crime is mixed.

Community policing involves law enforcement agencies working collaboratively with residents to identify and solve local safety and security concerns. These partnerships are designed to foster community trust in the police, help reduce fear of violence, and encourage perceptions of safety. Community policing strategies can include routine, non-enforcement interactions during police patrols and problem-focused community meetings. A recent meta-analysis of the effects of community policing on perceptions and community experiences of crime found that it does have a positive impact on fear of crime [39]. However, a systematic review of research on policing strategies found that, though community policing was associated with a significant reduction in public perceptions of disorder, there was no overall reduction in fear of crime [40].

Features of the **built environment** exert both direct and indirect effects on perceived safety [41]. Changes to neighbourhood design and management can help reduce violence, with some studies highlighting reduced alcohol availability, improved street connectivity, and green housing as effective strategies [42]. Microscale features of the built environment, such as street furniture, lighting, surveillance, pavement characteristics and design, influence healthy behaviors and mental well-being by conveying a sense of safety [43]. Across England and Wales, the Safer Streets Fund evaluation found that police and local authority efforts targeting community and environmental initiatives (e.g., graffiti removal, community gardens) and home security measures can help to reduce fear of crime and improve feelings of safety across communities [44]. This suggests that well-designed built environments can play a key role in improving perceptions of violence-related safety.

In summary, violence-related safety concerns influence health outcomes through multiple pathways, including physiological stress responses, mental health impacts, and health-related behaviours. These effects are particularly pronounced among vulnerable groups, including children, older adults, and women. While both perceived and actual risks of violence shape these outcomes, emerging evidence suggests that perceptions of control over risk play a crucial role in determining individual health behaviours. The Double Dividend of Safety highlights the potential for interventions that reduce violence-related risks to not only enhance safety but also promote healthier behaviours. Addressing features of the built environment that influence both objective and subjective dimensions of safety will be essential for public health strategies aiming to mitigate some of the long-term health consequences of fear of violence.

References

1. Arcaya MC, Tucker-Seeley RD, Kim R, Schnake-Mahl A, So M, Subramanian SV. (2016). Research on neighborhood effects on health in the United States: A systematic review of study characteristics. Soc Sci Med, 168, 16-29. https://doi.org/10.1016/j.socscimed.2016.08.047
2. Lorenc T, Petticrew M, Whitehead M, Neary D, Clayton S, Wright K, Cummins S, Sowden A, Renton A. (2014). Crime Fear of Crime and Mental Health: Synthesis of Theory and Systematic Reviews of Interventions and Qualitative Evidence. Public Health Research, 2(2), 1-398.
3. Baranyi G, Di Marco MH, Russ TC, Dibben C, Pearce J. (2021). The impact of neighbourhood crime on mental health: A systematic review and meta-analysis. Soc Sci Med, 282, 114106. https://doi.org/10.1016/j.socscimed.2021.114106
4. De Bourdeaudhuij I, Van Dyck D, Salvo D, Davey R, Reis RS, Schofield G, Sarmiento OL, Mitas J, Christiansen LB, MacFarlane D *et al*. (2015). International study of perceived neighbourhood environmental attributes and Body Mass Index: IPEN Adult study in 12 countries. International Journal of Behavioral Nutrition and Physical Activity, 12(1), 62. https://doi.org/10.1186/s12966-015-0228-y
5. Berglund E, Westerling R, Lytsy P. (2017). Housing Type and Neighbourhood Safety Behaviour Predicts Self-rated Health, Psychological Well-being and Frequency of Recent Unhealthy Days: A Comparative Cross-sectional Study of the General Population in Sweden. Planning Practice & Research, 32(4), 444-465. https://doi.org/10.1080/02697459.2017.1374706
6. Putrik P, van Amelsvoort L, Mujakovic S, Kunst AE, van Oers H, Kant I, Jansen MW, De Vries NK. (2019). Assessing the role of criminality in neighbourhood safety feelings and self-reported health: results from a cross-sectional study in a Dutch municipality. BMC Public Health, 19(1), 920. https://doi.org/10.1186/s12889-019-7197-z
7. Miliauskas CR, Faus DP, da Cruz VL, do Nascimento Vallaperde JGR, Junger W, Lopes CS. (2022). Community violence and internalizing mental health symptoms in adolescents: A systematic review. BMC Psychiatry, 22(1), 253. https://doi.org/10.1186/s12888-022-03873-8
8. Motley R, Sewell W, Chen Y-C. (2017). Community Violence Exposure and Risk Taking Behaviors Among Black Emerging Adults: A Systematic Review. Journal of Community Health, 42(5), 1069-1078. https://doi.org/10.1007/s10900-017-0353-4
9. Jovanovic T, Vance LA, Cross D, Knight AK, Kilaru V, Michopoulos V, Klengel T, Smith AK. (2017). Exposure to Violence Accelerates Epigenetic Aging in Children. Scientific Reports, 7(1), 8962. https://doi.org/10.1038/s41598-017-09235-9
10. Shalev I, Moffitt TE, Sugden K, Williams B, Houts RM, Danese A, Mill J, Arseneault L, Caspi A. (2013). Exposure to violence during childhood is associated with telomere erosion from 5 to 10 years of age: a longitudinal study. Mol Psychiatry, 18(5), 576-581. https://doi.org/10.1038/mp.2012.32
11. Wright AW, Austin M, Booth C, Kliewer W. (2017). Systematic Review: Exposure to Community Violence and Physical Health Outcomes in Youth. Journal of Pediatric Psychology, 42(4), 364-378. https://doi.org/10.1093/jpepsy/jsw088
12. Won J, Lee C, Forjuoh SN, Ory MG. (2016). Neighborhood safety factors associated with older adults' health-related outcomes: A systematic literature review. Social Science & Medicine, 165, 177-186. https://doi.org/10.1016/j.socscimed.2016.07.024
13. Sun VK, Stijacic Cenzer I, Kao H, Ahalt C, Williams BA. (2012). How Safe is Your Neighborhood? Perceived Neighborhood Safety and Functional Decline in Older Adults. Journal of General Internal Medicine, 27(5), 541-547. https://doi.org/10.1007/s11606-011-1943-y

14. Choi YJ, Matz-Costa C. (2018). Perceived Neighborhood Safety, Social Cohesion, and Psychological Health of Older Adults. The Gerontologist, 58(1), 196-206. https://doi.org/10.1093/geront/gnw187
15. Assari S, Caldwell CH, Zimmerman MA. (2015). Perceived Neighborhood Safety During Adolescence Predicts Subsequent Deterioration of Subjective Health Two Decades Later; Gender Differences in a Racially-Diverse Sample. International Journal of Preventive Medicine, 6(1).
16. Assari S, Moghani Lankarani M, Caldwell CH, Zimmerman MA. (2016). Fear of Neighborhood Violence During Adolescence Predicts Development of Obesity a Decade Later: Gender Differences Among African Americans. Arch Trauma Res, 5(2), e31475. https://doi.org/10.5812/atr.31475
17. Almeida Bentes A, Comini César C, Coelho Xavier C, Teixeira Caiaffa W, Proietti FA. (2017). Self-rated health and perceived violence in the neighborhood is heterogeneous between young women and men. BMC Public Health, 17(1), 967. https://doi.org/10.1186/s12889-017-4969-1
18. Lovasi GS, Goh CE, Pearson AL, Breetzke G. (2014). The independent associations of recorded crime and perceived safety with physical health in a nationally representative cross-sectional survey of men and women in New Zealand. BMJ Open, 4(3), e004058. https://doi.org/10.1136/bmjopen-2013-004058
19. Hipp JR. (2010). Assessing Crime as a Problem: The Relationship Between Residents' Perception of Crime and Official Crime Rates Over 25 Years. Crime & Delinquency, 59(4), 616-648. https://doi.org/10.1177/0011128710382264
20. Rees-Punia E, Hathaway ED, Gay JL. (2018). Crime, perceived safety, and physical activity: A meta-analysis. Preventive Medicine, 111, 307-313. https://doi.org/10.1016/j.ypmed.2017.11.017
21. Ambrey CL, Fleming CM, Manning M. (2014). Perception or Reality, What Matters Most When it Comes to Crime in Your Neighbourhood? Social Indicators Research, 119(2), 877-896. https://doi.org/10.1007/s11205-013-0521-6
22. Robinette JW, Piazza JR, Stawski RS. (2021). Neighborhood safety concerns and daily well-being: A national diary study. Wellbeing, Space and Society, 2, 100047. https://doi.org/10.1016/j.wss.2021.100047
23. Carbone JT. (2020). Neighborhood perceptions and allostatic load: Evidence from Midlife in the United States study. Health & Place, 61, 102263. https://doi.org/10.1016/j.healthplace.2019.102263
24. Dragioti E, Radua J, Solmi M, Gosling CJ, Oliver D, Lascialfari F, Ahmed M, Cortese S, Estradé A, Arrondo G *et al*. (2023). Impact of mental disorders on clinical outcomes of physical diseases: an umbrella review assessing population attributable fraction and generalized impact fraction. World Psychiatry, 22(1), 86-104. https://doi.org/10.1002/wps.21068
25. Mayne SL, Mitchell JA, Virudachalam S, Fiks AG, Williamson AA. (2021). Neighborhood environments and sleep among children and adolescents: A systematic review. Sleep Medicine Reviews, 57, 101465. https://doi.org/10.1016/j.smrv.2021.101465
26. Liu J, Yang L, Xiao L, Tao Z. (2022). Perceived Neighborhood Environment Impacts on Health Behavior, Multi-Dimensional Health, and Life Satisfaction. Front Public Health, 10, 850923. https://doi.org/10.3389/fpubh.2022.850923
27. Richardson AS, Troxel WM, Ghosh-Dastidar M, Hunter GP, Beckman R, Colabianchi N, Collins RL, Dubowitz T. (2017). Pathways through which higher neighborhood crime is longitudinally associated with greater body mass index. International Journal of Behavioral Nutrition and Physical Activity, 14(1), 155. https://doi.org/10.1186/s12966-017-0611-y
28. Foell A, Pitzer KA, Nebbitt V, Lombe M, Yu M, Villodas ML, Newransky C. (2021). Exposure to community violence and depressive symptoms: Examining community, family, and peer effects among public housing youth. Health Place, 69, 102579. https://doi.org/10.1016/j.healthplace.2021.102579

29. Brown RD, Pepper GV. (2024). The Relationship Between Perceived Uncontrollable Mortality Risk and Health Effort: Replication, Secondary Analysis, and Mini Meta-analysis. Annals of Behavioral Medicine, 58(3), 192-204. https://doi.org/10.1093/abm/kaad072
30. Brown RD, Pepper GV. (2024). The Uncontrollable Mortality Risk Hypothesis: Theoretical foundations and implications for public health. Evolution, Medicine, and Public Health, 12(1), 86-96. https://doi.org/10.1093/emph/eoae009
31. Pepper GV, Nettle D. (2014). Perceived Extrinsic Mortality Risk and Reported Effort in Looking after Health. Human Nature, 25(3), 378-392. https://doi.org/10.1007/s12110-014-9204-5
32. Pepper GV, Nettle D: Socioeconomic Disparities in Health Behaviour: An Evolutionary Perspective. In: *Applied Evolutionary Anthropology: Darwinian Approaches to Contemporary World Issues*. edn. Edited by Gibson MA, Lawson DW. New York, NY: Springer New York; 2014: 225-243.
33. Brown RD, Coventry L, Pepper GV. (2023). COVID-19: the relationship between perceptions of risk and behaviours during lockdown. Journal of Public Health, 31(4), 623-633. https://doi.org/10.1007/s10389-021-01543-9
34. Brown RD, Sillence E, Pepper GV. (2024). Individual characteristics associated with perceptions of control over mortality risk and determinants of health effort. Risk Analysis, 44(6), 1339-1356. https://doi.org/10.1111/risa.14243
35. Isch C, Brown RD, Todd PM, Aktipis A, Pepper GV. (2023). Objective risk exposure, perceived uncontrollable mortality risk, and health behaviors. Journal of Public Health. https://doi.org/10.1007/s10389-023-01994-2
36. Lloyd's Register Foundation. (2024). World Risk Poll 2024 Report - What the world worries about: global perceptions and experiences of risk and harm. https://wrp.lrfoundation.org.uk/sites/default/files/2024-11/World%20Risk%20Poll%202024%20Report%20%20-%20What%20the%20world%20worries%20about%20.pdf
37. Cordner G. (2010). Reducing Fear of Crime: Strategies for Police. https://portal.cops.usdoj.gov/ResourceCenter/content.ashx/cops-p173-pub.pdf
38. Ramachandran R, Ritchie K. (2023). What makes people feel safe? Public perceptions of street-based safety. University of Lincolnhttps://repository.lincoln.ac.uk/articles/book/What_makes_people_feel_safe_Public_perceptions_of_street_based_safety/24876375?file=43770318.
39. Ekici N, Akdogan H, Kelly R, Gultekin S. (2022). A meta-analysis of the impact of community policing on crime reduction. Journal of Community Safety and Well-Being, 7(3), 111-121. https://doi.org/10.35502/jcswb.244
40. Gill C, Weisburd D, Telep CW, Vitter Z, Bennett T. (2014). Community-oriented policing to reduce crime, disorder and fear and increase satisfaction and legitimacy among citizens: a systematic review. Journal of Experimental Criminology, 10(4), 399-428. https://doi.org/10.1007/s11292-014-9210-y
41. Zeng E, Dong Y, Yan L, Lin A. (2023). Perceived Safety in the Neighborhood: Exploring the Role of Built Environment, Social Factors, Physical Activity and Multiple Pathways of Influence. *Buildings*. vol. 13
42. Kondo MC, Andreyeva E, South EC, MacDonald JM, Branas CC. (2018). Neighborhood Interventions to Reduce Violence. Annual Review of Public Health, 39(Volume 39, 2018), 253-271. https://doi.org/10.1146/annurev-publhealth-040617-014600
43. Frank LD, Iroz-Elardo N, MacLeod KE, Hong A. (2019). Pathways from built environment to health: A conceptual framework linking behavior and exposure-based impacts. Journal of Transport & Health, 12, 319-335. https://doi.org/10.1016/j.jth.2018.11.008
44. Home Office. (2023). Evaluation of the Safer Streets Fund Round 1, year ending March 2021. https://www.gov.uk/government/publications/safer-streets-fund-evaluation-round-1-year-ending-march-2021/evaluation-of-the-safer-streets-fund-round-1-year-ending-march-2021#summary-of-implications-and-recommendations

THE DOUBLE DIVIDEND OF SAFETY PROJECT

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