

Crime, fear of crime and mental health: synthesis of theory and systematic reviews of interventions and qualitative evidence

Theo Lorenc,^{1*} Mark Petticrew,¹
Margaret Whitehead,² David Neary,²
Stephen Clayton,² Kath Wright,³ Hilary Thomson,⁴
Steven Cummins,⁵ Amanda Sowden³
and Adrian Renton⁶

¹Department of Social and Environmental Health Research, London School of Hygiene and Tropical Medicine, London, UK

²Department of Public Health and Policy, University of Liverpool, Liverpool, UK

³Centre for Reviews and Dissemination, University of York, York, UK

⁴MRC Social and Public Health Sciences Unit (SPHSU), University of Glasgow, Glasgow, UK

⁵School of Geography, Queen Mary University of London, London, UK

⁶Institute for Health and Human Development, University of East London, London, UK

*Corresponding author

Declared competing interests of authors: none

Disclaimer: This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

Published March 2014

DOI: 10.3310/phr02020

Scientific summary

Crime, fear of crime and mental health

Public Health Research 2014; Vol. 2: No. 2

DOI: 10.3310/phr02020

NIHR Journals Library www.journalslibrary.nihr.ac.uk

Scientific summary

Background

Crime and fear of crime may impact negatively on health and well-being in a range of ways. This includes indirect community-level impacts as well as direct negative impacts on victims. Crime and the fear of crime may affect a range of physical and mental health status outcomes, health behaviour outcomes (e.g. physical activity) and social well-being outcomes (e.g. social cohesion). Crime and the fear of crime are particularly of interest as potential mediators of environmental influences on health and well-being outcomes and as potential targets of environmental interventions. This project aimed to synthesise quantitative and qualitative evidence on the environment, crime and the fear of crime, and health and well-being.

Objectives

The objectives of the project were to:

1. review theories and empirical data about the links between crime, fear of crime, the environment and health and well-being, and to develop from this a conceptual 'map' that underpins the types of intervention that stem from the theories
2. synthesise the empirical evidence (quantitative and qualitative) on the effects on mental health and well-being of community-level interventions, primarily changes to the built environment [such as changes to local environments, 'target hardening', security measures, closed-circuit television (CCTV) and other interventions]
3. summarise the evidence on whether the interventions in question have the potential to reduce health and social inequalities
4. produce policy-friendly summaries of this evidence that can be used to inform decisions about policy and disseminated to appropriate policy/practice audiences.

Methods

The project contains four distinct components.

1. *Review of theories and pathways*. This component used a pragmatic non-systematic review methodology with targeted, iterative searching and selection. The data were used to develop a meta-theoretical causal map providing an overview of theoretical links between the following areas: crime; fear of crime; health and well-being; the built environment; the social environment; and national-level policy and other factors. Data on associations between factors were drawn from quantitative observational research to provide an indicative assessment of the strength of the links involved.
2. *Systematic review of effectiveness*. This component followed standard (Preferred Reporting Items for Systematic Reviews and Meta-Analyses or PRISMA) guidance for systematic reviews.
 - Searching – 18 databases including EMBASE, MEDLINE, PsycINFO and Science Citation Index were searched from inception to 2010 and other sources were used to locate grey literature. Search terms referred to crime, fear of crime and the built environment.
 - Screening – The following inclusion criteria were used: (i) Does the study evaluate an intervention intended to reduce crime and/or the fear of crime, or report data on crime and/or fear of crime

outcomes? (ii) Does the study report data on at least one of the following outcomes: fear of crime, mental health status, physical health status, health behaviours or social well-being? (iii) Does the study report data on an intervention of which a major component involved changes to the physical built environment? (iv) Is the study a primary research study reporting quantitative outcome data that were measured both before and after the intervention and/or in which assignment to intervention and control groups was random? (v) Was the study conducted in a country that is a current member of the Organisation for Economic Co-operation and Development (OECD)?

- Quality assessment and data extraction – Quality was assessed using a modified version of the Hamilton tool, including the following domains: selection bias; study design; confounders; blinding; data collection; and withdrawals and dropouts. Data were extracted on the following characteristics of the studies: study design; location; area characteristics; sampling methods and eligible population; recruitment methods and response rate; sample demographics; intervention content; interventions received by comparison group; sample size; data collection methods; comparability of intervention and comparison groups; analysis methods; power calculations; length of follow-up; attrition rate; outcomes measured; findings; study limitations; and study funding.
- Data synthesis – Data were synthesised narratively within seven categories of intervention. Median differences were used to summarise quantitative information on effect sizes. A summary table of effect direction and significance was also used for synthesis.

3. *Systematic review of UK qualitative evidence.* This component followed standard (PRISMA) guidance for systematic reviews.

- Searching – 18 databases including EMBASE, MEDLINE, PsycINFO and Science Citation Index were searched from inception to 2010 and other sources were used to locate grey literature. Search terms referred to crime, fear of crime and the built environment.
- Screening – The following inclusion criteria were used: (i) Does the study report substantive data on the fear of crime? (ii) Does the study report substantive data on some aspect of the physical built environment? (iii) Is the study a primary qualitative study, for example interviews, focus groups, ethnography? (iv) Was the study conducted in the UK?
- Quality assessment and data extraction – Quality was assessed using Hawker *et al.*'s tool, which covers the following domains: abstract and title; introduction and aims; methods and data; sampling; data analysis; ethics and bias; results; transferability or generalisability; implications and usefulness. Data were extracted on the following characteristics of the studies: location; research question or focus; theoretical approach; sampling methods and eligible population; recruitment methods; sample demographics; data collection methods; data analysis methods; study limitations; study funding. Qualitative findings were coded line by line.
- Data synthesis – The first stage of qualitative synthesis was a thematic analysis using a grounded theory approach. Following this, a framework derived from the theory review was used to categorise the themes emerging from the data. In a second stage of synthesis, akin to a 'lines of argument' synthesis, broader explanatory concepts were developed from the themes. Finally, an informal cross-study synthesis was conducted, drawing together the findings from the review of theory, the review of effectiveness and the review of qualitative data.

4. *Stakeholder interviews and focus groups.* Semistructured interviews were conducted with nine stakeholders working in the field of community safety. Interviews focused on practitioners' perspectives on reducing crime and the fear of crime as well as exploring links to health and well-being. The use of evidence and research in promoting community safety was also explored. Two focus groups were also conducted with members of the public. Data were analysed thematically.

Results

1. Mapping review of theories and pathways

The concept of fear of crime has been subject to considerable debate and there is little consensus around its value. In particular, fear of crime appears to be only weakly correlated with actual crime rates, and to reflect a range of broader perceptions and affective reactions. A range of explanations has been proposed to account for the wide variance in fear of crime outcomes. However, fear of crime does appear to be consistently, although not strongly, associated with several health and well-being outcomes at an individual level. Crime has been shown to be associated with a range of poorer health outcomes at an area level, although the causal pathways involved are unclear.

A range of environmental approaches to crime reduction are current, of which the most widely used is CPTED (Crime Prevention through Environmental Design); there is some empirical support for CPTED but the evidence is mixed. Environmental factors may also be associated with fear of crime independently of any effect on crime (e.g. physical 'incivilities' such as litter and abandoned buildings).

2. Systematic review of effectiveness

A total of 12,093 references were screened on abstract for the two systematic reviews, of which 47 studies were included in the systematic review of effectiveness, including one randomised controlled trial, 21 non-randomised controlled studies and 25 uncontrolled before-and-after studies. Most studies investigate only fear of crime outcomes and do not measure health or social well-being outcomes. The interventions fall into seven categories:

1. *Home security interventions (five studies)*. These interventions include a range of environmental interventions focused on increasing the security of homes. Three studies show some positive effect on fear of crime (two controlled and one uncontrolled). One uncontrolled study shows some evidence of improved mental health and social well-being outcomes.
2. *Street lighting improvements (16 studies)*. Of four controlled studies measuring the impact of street lighting improvements on fear of crime outcomes, three show no clear effect and one shows a significant improvement. Of 12 uncontrolled studies, most show a positive trend towards reduced fear. No studies measure any health or social outcomes.
3. *Closed-circuit television (CCTV) (six studies)*. Three controlled and three uncontrolled studies measure the impact of CCTV on fear of crime outcomes; none shows any consistent and significant trend towards reduced fear. No studies measure any health or social outcomes.
4. *Multicomponent crime prevention interventions (nine studies)*. These include a range of interventions, many based on CPTED theory, intended to reduce crime rates in a specific area using environmental measures, often in conjunction with other measures such as policing. Of five controlled studies, three show trends towards reduced fear, although their significance is unclear, and two show no change. Of four uncontrolled studies, three show trends towards reduced fear whereas one is more mixed. Five studies measure social well-being outcomes such as social cohesion, with most showing no marked effect.
5. *Housing improvement (seven studies)*. These interventions include both improvements to existing housing and relocating residents to improved housing. Of four controlled studies, two show a trend towards reduced fear of crime (although their significance is unclear), one is mixed and one shows a significant adverse effect (increased fear). Of three uncontrolled studies, two show significant reductions in fear.
6. *Regeneration and area-based initiatives (two studies)*. These interventions include large-scale regeneration programmes with social and economic as well as environmental components. One controlled study shows significant reductions in fear of crime in both the intervention group and the comparison group; one uncontrolled study shows no change.

7. *Improvements to public areas (two studies)*. These interventions include environmental improvements in public areas that were not mainly crime or security focused. One controlled study finds a significant improvement in fear of crime; one uncontrolled study shows mixed findings, with significant improvements in some outcomes.

Overall, the most promising categories of interventions appear to be home security (1) and environmental improvements (7). Housing improvement (5) includes some promising findings but also some negative ones. The evidence on regeneration programmes (6) is challenging to interpret and does not support strong conclusions on effectiveness. For street lighting (2), promising findings from the uncontrolled studies are not borne out by the controlled studies, and there is little evidence that CCTV (3) or CPTED-type crime prevention programmes (4) reduce fear of crime. However, there is insufficient high-quality evidence for any intervention category to support conclusive messages on effectiveness.

Findings on subgroup effects with respect to age are mixed; with respect to gender there is a slight tendency for greater effects on women than on men; and there are few data on ethnicity and none on socioeconomic status. A wide range of outcome measures are used to measure fear of crime, which may limit the validity of the synthesis.

3. Systematic review of qualitative evidence

In total, 39 studies were included in the review of qualitative evidence. Physical environmental factors, such as street lighting and neglect, were frequently reported by participants as determinants of fear. The layout of the built environment is also important, particularly a sense of 'openness' and visibility, as is the presence of other people. However, several participants suggest that the physical environment determines fear less in itself than because of its social meanings, for example as an indicator of disadvantage or low social cohesion. Environmental factors may be more important in public areas than in residential areas.

Many participants report feeling safer in their own area than in areas that are unfamiliar. Social cohesion is also important in that having a network of interpersonal relationships in an area protects against fear. Several groups of participants – including women, black and minority ethnic participants, lesbian and gay participants, participants with mental health problems and parents of young children – report more pervasive fear and greater impacts of fear on well-being. Several other determinants of fear are mentioned, including perceived vulnerability, victimisation experience, individual factors and attitudes to crime, but the impact of these appears to be limited.

In terms of the consequences of fear, the most frequently mentioned impact is to limit people's everyday activities. This may particularly lead to limitations on social interaction and physical activity. Children and young people report that parents limit their activities as a result of fear of crime. Fear of crime may also lead to particular areas, and their residents, being socially stigmatised.

4. Stakeholder interviews and focus groups

Stakeholders in Community Safety Partnerships were of the view that they had made considerable progress in reducing crime and antisocial behaviour based on a combination of national trends and particular local factors. However, much less progress had been made in reducing fear of crime, which was more difficult to both measure and influence. Environmental interventions, such as security measures and alley gating, were commonly used to address specific crime issues such as burglary and also to promote community safety. Changes to the physical environment were invariably part of more complex initiatives that involved the intelligence-led use of resources in particular localities. Community safety practitioners considered reducing fear to be linked to improving health and well-being on the basis of their professional experience although there was limited formal research evidence that they could draw on to support this view.

Conclusions

The theory review suggests that, although both crime and fear of crime have impacts on health, they operate through largely distinct pathways. Crime and fear of crime also appear to be associated with different environmental determinants. Thus, fear of crime may be of greater conceptual value to researchers as a dimension of the environmental determinants of well-being than as a specifically crime-related outcome. However, there remain serious unanswered questions about the validity and interpretation of fear of crime measures.

The qualitative findings may illuminate debates in the theoretical literature. In particular, they suggest that local-level social determinants of fear of crime are more important than either physical environmental factors or higher-level social or political factors. They suggest that risk of crime is unlikely to generate fear in itself, at least at low levels of risk, unless other factors make the risk experientially salient; these factors may include social inequalities and discrimination, as well as environmental factors.

Overall, the findings suggest that interventions which impact on the broader social determinants of fear of crime are more likely to reduce fear than interventions that aim narrowly at preventing crime, although it remains unclear whether this is an effective way to improve well-being.

The findings indicate a number of gaps in the primary evaluation literature. In particular, there is a major gap around the health impacts of interventions to reduce crime or the fear of crime. There are also areas where further systematic reviews would be valuable, particularly around interventions to reduce fear of crime that fall outside the scope of the present review (e.g. policing interventions). Systematic reviews of qualitative evidence have also been little employed in criminology or the sociology of crime and have a potentially valuable contribution to make.

Funding

The National Institute for Health Research Public Health Research programme.

Public Health Research

ISSN 2050-4381 (Print)

ISSN 2050-439X (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: nihredit@southampton.ac.uk

The full PHR archive is freely available to view online at www.journalslibrary.nihr.ac.uk/phr. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

Criteria for inclusion in the *Public Health Research* journal

Reports are published in *Public Health Research* (PHR) if (1) they have resulted from work for the PHR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Reviews in *Public Health Research* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

PHR programme

The Public Health Research (PHR) programme, part of the National Institute for Health Research (NIHR), evaluates public health interventions, providing new knowledge on the benefits, costs, acceptability and wider impacts of non-NHS interventions intended to improve the health of the public and reduce inequalities in health. The scope of the programme is multi-disciplinary and broad, covering a range of interventions that improve public health. The Public Health Research programme also complements the NIHR Health Technology Assessment programme which has a growing portfolio evaluating NHS public health interventions.

For more information about the PHR programme please visit the website: www.phr.nihr.ac.uk/

This report

The research reported in this issue of the journal was funded by the PHR programme as project number 09/3000/14. The contractual start date was in July 2010. The final report began editorial review in July 2012 and was accepted for publication in April 2013. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The PHR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the PHR programme or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the PHR programme or the Department of Health.

© Queen's Printer and Controller of HMSO 2014. This work was produced by Lorenc *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).

Public Health Research Editor-in-Chief

Professor Catherine Law Professor of Public Health and Epidemiology, Unit Head, Centre for Paediatric Epidemiology and Biostatistics, UCL Institute of Child Health, UK

NIHR Journals Library Editor-in-Chief

Professor Tom Walley Director, NIHR Evaluation, Trials and Studies and Director of the HTA Programme, UK

NIHR Journals Library Editors

Professor Ken Stein Chair of HTA Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

Professor Andree Le May Chair of NIHR Journals Library Editorial Group (EME, HS&DR, PGfAR, PHR journals)

Dr Martin Ashton-Key Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

Professor Matthias Beck Chair in Public Sector Management and Subject Leader (Management Group), Queen's University Management School, Queen's University Belfast, UK

Professor Aileen Clarke Professor of Health Sciences, Warwick Medical School, University of Warwick, UK

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Peter Davidson Director of NETSCC, HTA, UK

Ms Tara Lamont Scientific Advisor, NETSCC, UK

Professor Elaine McColl Director, Newcastle Clinical Trials Unit, Institute of Health and Society, Newcastle University, UK

Professor William McGuire Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads Honorary Professor, Business School, Winchester University and Medical School, University of Warwick, UK

Professor Jane Norman Professor of Maternal and Fetal Health, University of Edinburgh, UK

Professor John Powell Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK

Professor James Raftery Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts Professorial Research Associate, University College London, UK

Professor Helen Snooks Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Please visit the website for a list of members of the NIHR Journals Library Board:
www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: nihredit@southampton.ac.uk