One step beyond the systematic review: presenting research syntheses to a policy and practitioner audience

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Evidence for Healthy Public Policy

- Interest in evidence for policy making

- Health Impact Assessment (HIA)
  - ‘any combination of procedures or methods by which a proposed policy or programme may be judged as to the effects it may have on the health of a population’
  - Ratner et al 1996

- Draws on range of knowledge
  - local and lay knowledge
  - existing research findings
Can improved housing improve health?

- **Included**
  
  Housing intervention studies which measured health and/or social effects - ALL designs
  
  Outcome measures incorporate a broad model of health
  
  Pre & post intervention survey of self-reported health
  
  Systematic reviews

- **Excluded**

  Radon, lead, furniture interventions, home fire and accident prevention, relocation, housing subsidies
Review of world literature

- Searched all relevant databases (16)- all languages (1887-2000)
- Hand searching bibliographies
- Contacted experts- UK and international, e-mail housing groups
- Included ALL studies which tracked health, illness or wellbeing changes following rehousing or housing improvement
- Identified 13,444 papers on housing and health
Studies identified

- Very few studies: 18 studies

- Heterogeneity of studies: outcomes, interventions, and study quality makes synthesis difficult

- Findings of health impacts:
  - General improvement, especially mental health
  - Possibility of adverse effects
Different strokes for different folks

- Synthesise only the best studies
- Synthesise by intervention type eg central heating, medical priority rehousing
- Synthesise by outcome type eg respiratory symptoms, mental health impacts
Synthesising according to study quality

Best quality (rated by 2 reviewers):
- control group
- prospective
- >80% follow-up over 6 months or more
Overview of findings from best studies

- Objective measure of mental health    Improved
  (1 study of Medical Priority Rehousing, n=22)

- Self-reported health & illness episodes    Improved
  (2 studies of rehousing, n<1000 & 159)

- Self-reported symptoms    Inconsistent
  (2 studies of energy efficiency, n=132 & 641)

- Age standardised mortality rates    Increased
  (1 study of rehousing, n=2008)
General health & illness effects

- General health (13 studies): self-reported wellbeing, activity, illness episodes, symptoms, health service use

<table>
<thead>
<tr>
<th>Effect</th>
<th>Result</th>
<th>Number of Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worse</td>
<td>2 studies</td>
<td></td>
</tr>
<tr>
<td>No difference</td>
<td>5 studies</td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td>10 studies</td>
<td></td>
</tr>
</tbody>
</table>

(2 x Grade B)

- Age standardised mortality rates
  Increased following rehousing at 5 years compared to control group
Mental health

Mental health (9 studies): objective measure, self-reported, hypnotic prescribing

- Improved in all 9 studies (3 x Grade B)

- Dose response relationship demonstrated in 1 study
Respiratory health

Respiratory health (4 x Grade C) : self-reported, respiratory prescribing

Following rehousing and area regeneration:
Chronic respiratory conditions @ 5 years \(\uparrow\) (+12%)
Bronchial & asthmatic symptoms @ 1-4 years \(\downarrow\) (-11%)
No difference in respiratory prescribing \(\leftrightarrow\)

Following central heating installation (schoolchildren):
Respiratory symptoms @ 3 months \(\downarrow\)
Days lost from school due to asthma \(\downarrow\)
Rehousing/refurbishment with or without community regeneration

12 studies (7 UK, 4 USA, 1 Japan)

Assessed
- range from new bed to new housing and relocation from slum area

- Outcomes: self-reported health and wellbeing, symptoms, respiratory health, mental health measures, death rates, social involvement, fear of crime
The digested review: *Rehousing/refurbishment with or without community regeneration*

- Feelings of general health or wellbeing: Inconclusive
- General Illness: Inconclusive
- Breathing problems: Inconclusive
- Mental health: Improved
- Death rates: Worse
Energy efficiency studies

4 studies (3 UK, 1 Denmark, 1986-1999)

Assessed
- Central heating
- Installation of heat with rent
- Replacement windows
- General energy efficiency measures in tower blocks

impact on
- childhood respiratory symptoms
- general symptoms
- general symptoms
- general health

- studies of refurbishment and rehousing did not specify energy efficiency improvements
The digested review: Energy efficiency

- Feelings of general health or wellbeing: Improved
- General Illness: Inconclusive
- Breathing problems: Improved
- Mental health: Inconclusive
- Other: school time lost due to asthma: Improved
## Synthesis by intervention, outcome and study quality

<table>
<thead>
<tr>
<th>Intervention/Refurbishment</th>
<th>General Health</th>
<th>Respiratory Health</th>
<th>Mental Health</th>
<th>Social Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehousing/Refurbishment</td>
<td>Unclear +</td>
<td>Conflicting</td>
<td>Improved ++</td>
<td>Smoking reduced +</td>
</tr>
<tr>
<td>Medical Priority Rehousing</td>
<td>Improved +</td>
<td></td>
<td>Improved ++</td>
<td></td>
</tr>
<tr>
<td>Energy Efficiency Measures</td>
<td>Improved +</td>
<td>Improved +</td>
<td>No difference +</td>
<td>Improved +</td>
</tr>
</tbody>
</table>

**Strength of evidence by study quality**

- +++ Strong association
- ++ Moderate association
- + Weak association
Broader research evidence base

- Lack of clear findings of little use to practitioners
- Need broader research evidence base: to include knowledge of observed links between housing and health
- Drew on systematic and expert reviews where available
Physical characteristics of housing associated with poor health

Most serious hazards ranked

Air quality (particles & fibres causing death among the very ill)
Hygrothermal conditions (warmth & humidity)
Radon
Slips, trips and falls
Noise
House dust mites
Environmental tobacco smoke
Fires

*Building Research Establishment review (2001)*
Other housing related links to health

- Warmth & seasonal variation in mortality rates
- Housing tenure
- Housing design
- Housing satisfaction
Associated with housing improvement programmes

- Changes in rent increases and housing costs
- Process of moving house
- Social context and area effects of general area improvements
- Relocation to another area: neighbourhood effects
- Displacement
- Social exclusion and community division
- Gentrification
Sources of Research Evidence

- Systematic review of health impacts of housing improvement
- Observational research reporting main housing hazards linked to health
- Factors often associated with housing improvement programmes and reported to have health impacts or to explain presence or absence of impacts
Research informed questions

- Details of changes
  *Are there going to be any changes to housing costs?*

- Implementation of housing improvement
  *Was there sufficient consultation about the housing improvements?*

- Linking changes to health impacts
  *What is the research evidence that these changes will affect health and any specific symptoms?*

Guide for assessing health impacts of housing improvements

- Feeds evidence into practice
- Responding to practitioner requirements
- Update to include identified ongoing studies ?2004
Guide for assessing health impacts of housing improvements

- HIA process: screening and scoping project, identifying and assessing potential health impacts, making recommendations
- Sources of further information and data on housing
- Overview of housing in Scotland - tenure, standards, type, occupancy rates (Scottish House Condition Survey 1996)
- Tolerable Standard for housing
- Overview of new Scottish Housing Act
Research Synthesis

- Resource intensive merits appropriate dissemination strategy
- Need to bear in mind:
  - heterogeneity of studies
  - weight of research findings
  - target audience and application
- Packaging of central resource: background and contextual information
Full report available soon

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