The effect of sustained exposure to neighbourhood deprivation on the risk of experiencing intimate partner violence among women in the UK: a birth-cohort study

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Intimate partner violence against women in the UK

% Prevalence of physical, emotional, financial, or sexual abuse or stalking in 2017 Crime Survey in England and Wales

<table>
<thead>
<tr>
<th></th>
<th>Lifetime</th>
<th>Last year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>23.7</td>
<td>6.5</td>
</tr>
<tr>
<td>Men</td>
<td>10.3</td>
<td>2.8</td>
</tr>
</tbody>
</table>

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IPV prevention

- Effective prevention requires knowing:
  - Risk factors: Which conditions, when changed, will increase the risk of intimate partner violence
    - Greater risk
  - Protective factors: Which conditions, when changed, will decrease the risk of intimate partner violence
    - Lower risk
IPV prevention

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  - **Risk factors:** Which conditions, when changed, will increase the risk of intimate partner violence
  - Greater risk
  - **Protective factors:** Which conditions, when changed, will decrease the risk of intimate partner violence
  - Lower risk
- Best evidenced by studies that measure participants over time
Risk and protective factors of IPV

- Ecological model for IPV against women

Structural
- Distribution of resources; Policies, norms, and values

Community
- Characteristics of women’s neighbourhood, school, workplace

Relational
- Partners’ characteristics; Characteristics of women’s relationships

Individual
- Women’s personal history or characteristics

Ecological model for IPV against women

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Risk and protective factors of IPV

- Ecological model for IPV against women

![Diagram showing ecological model for IPV against women with categories: Distribution of resources; Policies, norms, and values, Characteristics of women’s neighbourhood, school, workplace, Structural, Community.]

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Neighbourhood deprivation & IPV

- Neighbourhood effects well established for ‘public’ forms of crime and violence
Neighbourhood deprivation & IPV – by what mechanisms?

Normalizing psychological and physical aggression
Neighbourhood deprivation & IPV – by what mechanisms?

- Normalizing psychological and physical aggression
- Increasing trauma and stress
Neighbourhood deprivation & IPV – by what mechanisms?

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- Exacerbating other individual/relational risks (e.g., substance use)
Risk and Protective Factors for Intimate Partner Violence Against Women: Systematic Review and Meta-analyses of Prospective–Longitudinal Studies

0 Structural

7 Community

37 Relational

27 Individual

71 risk or protective factors investigated in included studies

Yakubovich et al., 2018
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Yakubovich et al., 2018
Risk and Protective Factors for Intimate Partner Violence Against Women: Systematic Review and Meta-analyses of Prospective–Longitudinal Studies

All studies of neighbourhood deprivation were USA-based

No study on sustained exposure

Yakubovich et al., 2018
Neighbourhood deprivation & IPV in ALSPAC

- What is the effect of long-term exposure to neighbourhood deprivation on the risk of experiencing intimate partner violence among women?
The ALSPAC Cohort

- ALSPAC: Ongoing study of mothers, partners, and children started in 1990
- Total sample: 15 454 pregnancies
The ALSPAC Cohort

% Mothers of infants <1 year (1991 Census)

- **Owner occupier**: 79.1% (ALSPAC) vs 63.4% (Great Britain)
- **1+ person/room**: 33.5% (ALSPAC) vs 30.8% (Great Britain)
- **Car in household**: 90.8% (ALSPAC) vs 75.6% (Great Britain)
- **Married couple**: 79.4% (ALSPAC) vs 71.8% (Great Britain)
- **Non-White mother**: 2.2% (ALSPAC) vs 7.6% (Great Britain)
IPV in ALSPAC: ages 18-21

- At age 21, 2128 women reported frequency and timing of experiencing 8 IPV items ($\alpha = .95$):

<table>
<thead>
<tr>
<th>IPV sub-type</th>
<th>Example</th>
</tr>
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<tr>
<td>Physical (2 items)</td>
<td>‘Used physical force such as pushing or slapping’</td>
</tr>
<tr>
<td>Psychological (2 items)</td>
<td>‘Told you who you could see and where you could go’</td>
</tr>
<tr>
<td>Sexual (4 items)</td>
<td>‘Pressured into having sexual intercourse’</td>
</tr>
</tbody>
</table>

- Never (0), once (1), a few times (2), often (3)
- Experienced after age 18
Neighbourhood deprivation in ALSPAC: ages 0-18

- Indices of Multiple Deprivation (IMDs):
  1. Income deprivation
  2. Employment deprivation
  3. Education, skills, and training deprivation
  4. Health deprivation and disability
  5. Crime
  6. Barriers to housing and services
  7. Living environment deprivation
Neighbourhood deprivation in ALSPAC: ages 0-18

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- Relative deprivation of census-measured neighbourhoods in England (~650 households)
Neighbourhood deprivation & IPV against women in ALSPAC

Exposure to greater neighbourhood deprivation

x 9 time points

IPV risk and frequency between ages 18-21

Ages 0-18
Neighbourhood deprivation & IPV against women in ALSPAC

- Adjust for confounding by family-level socioeconomic and psychosocial indicators:

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<td>Parental education</td>
</tr>
<tr>
<td>Parental social class</td>
</tr>
<tr>
<td>Mother’s marital status</td>
</tr>
<tr>
<td>Mother’s number of children</td>
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Neighbourhood deprivation & IPV against women in ALSPAC

- Adjust for confounding by family-level socioeconomic and psychosocial indicators:

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<th>Baseline</th>
<th>At each time (lagged):</th>
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<tr>
<td>Parental education</td>
<td>Residential mobility</td>
</tr>
<tr>
<td>Parental social class</td>
<td>Parental employment</td>
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<tr>
<td>Mother’s marital status</td>
<td>Maternal depression</td>
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<td>Mother’s number of children</td>
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<td>Young person’s ethnicity</td>
<td>Financial difficulties</td>
</tr>
<tr>
<td></td>
<td>Family structure</td>
</tr>
<tr>
<td></td>
<td>Family income</td>
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Neighbourhood deprivation & IPV against women in ALSPAC

- Analysis: Weight participants by probability of receiving the exposure they did and staying in the sample conditional on prior exposure and covariate history at each time

\[
\frac{1}{p(\text{exposure}|\text{history})}
\]
Neighbourhood deprivation & IPV against women in ALSPAC

- Analysis: Weight participants by probability of receiving the exposure they did and staying in the sample conditional on prior exposure and covariate history at each time
  - Run pooled regression in weighted sample
  - A.k.a. marginal structural models with inverse probability of treatment weighting
Neighbourhood deprivation & IPV against women in ALSPAC

- Estimates **causal** effect of long-term neighbourhood deprivation independent of non-random selection into neighbourhoods and attrition (under assumptions)
Results: neighbourhood deprivation at age 0

% sample per IMD Quintile (N=5403 women)

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<th>IMD Quintile</th>
<th>% Sample</th>
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<tr>
<td>Least deprived</td>
<td>26.04</td>
</tr>
<tr>
<td>2</td>
<td>23.24</td>
</tr>
<tr>
<td>3</td>
<td>17.53</td>
</tr>
<tr>
<td>4</td>
<td>18.03</td>
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<td>Most deprived</td>
<td>15.07</td>
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Results: neighbourhood deprivation at age 18

% sample per IMD Quintile (N=2077 women)

- Least deprived: 37.94%
- 2: 26.38%
- 3: 17.00%
- 4: 12.28%
- Most deprived: 6.40%
Results: changes in neighbourhood exposure

% sample by number of changes in neighbourhood deprivation exposure between ages 0-18 (N=5671 women)
Results: estimated effect on IPV

- 30% of women experienced any IPV between ages 18-21
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- Living in more deprived neighbourhoods for longer increased risk of experiencing any IPV in early adulthood and the frequency of those experiences
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Summary

- Long-term exposure to more versus less deprived neighbourhoods over the first 18 years of life was associated with more frequent IPV (by at least 62%) and at least 36% higher risk of experiencing any IPV in early adulthood across various models.
What can we say about mechanisms?

- Normalizing psychological and physical aggression
- Decreasing social controls and support structures that ↓ violence and ↑ intervention capacity
- Increasing trauma and stress
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Heightened by sustained exposure during child and/or adolescent development?
What can we say about mechanisms?

- Longer exposure to more severe neighbourhood deprivation over childhood has been shown to:
  - ↓ cognitive ability
  - ↓ educational attainment
  - ↑ odds of early parenthood
- Our findings suggest additional importance of cumulative exposure over childhood to IPV risk
Limitations and future directions

- Future research should:
  - Test for differences by exposure pathways (e.g., critical periods)
  - Test underlying mechanisms and moderators
  - Replicate analyses in different contexts
    - And different definitions of neighbourhood deprivation?
    - IPV perpetration?
Conclusions

- First investigation of long-term neighbourhood-level deprivation on the risk of IPV against women
  - Necessary to build the longitudinal evidence base on contextual risk factors for IPV outside the US
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- First investigation of long-term neighbourhood-level deprivation on the risk of IPV against women
  - Necessary to build the longitudinal evidence base on contextual risk factors for IPV outside the US
- Raises importance of considering overlapping contexts of structural and interpersonal violence
- Suggests that this exposure increases IPV risk and identifying (+ targeting) determinants and mechanisms should be part of the prevention agenda
Acknowledgments

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