



**Violence, victimisation, drinking & area  
deprivation: findings from a general survey  
among British men**

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# Background

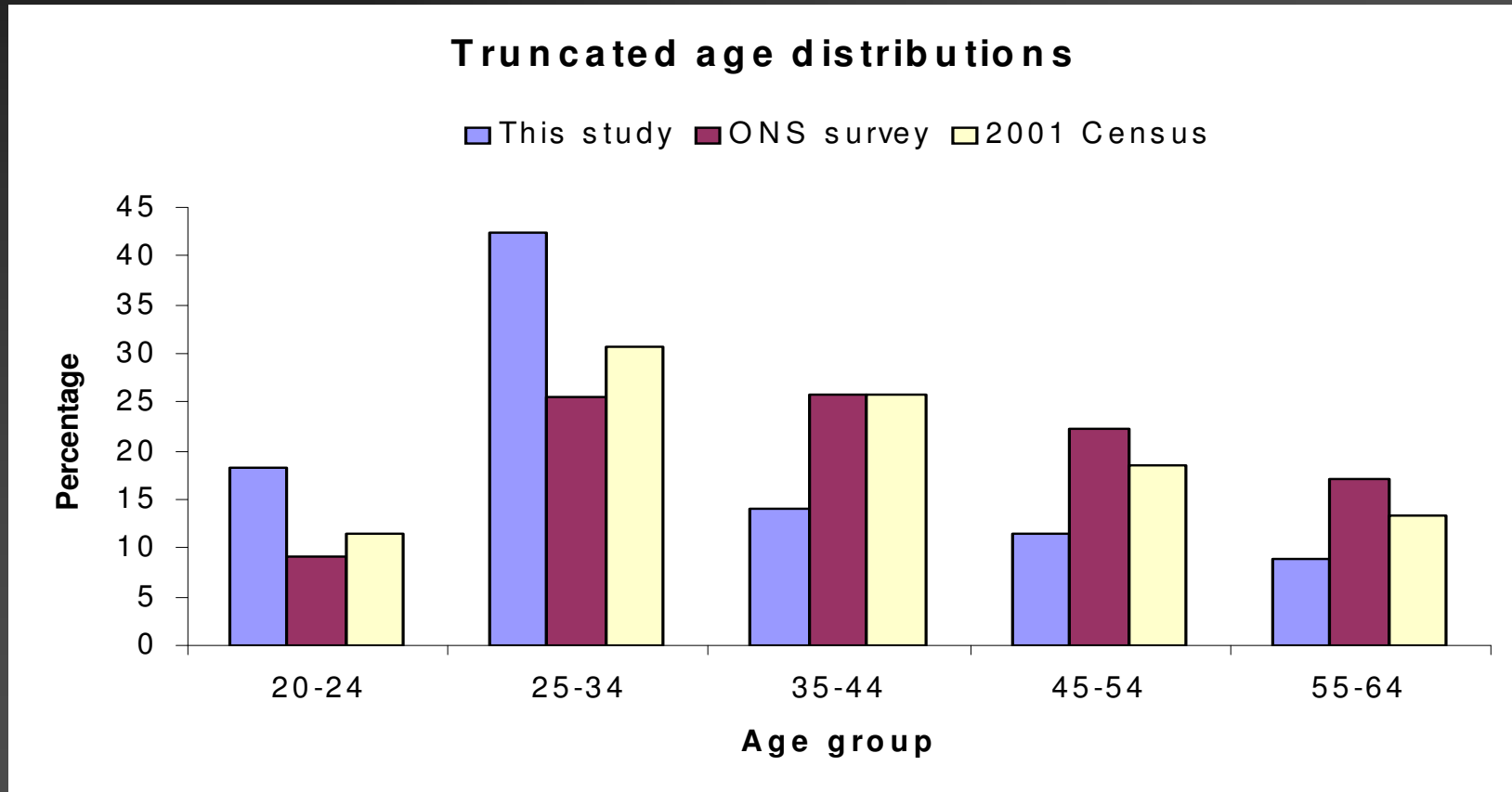
- Violence a cause of public concern in the UK  
(Coid, Yang et al, BJP, 2006, 189:12-19)
- Drinking problems the strongest risk factor for violent behaviour among British population  
(Coid, Yang et al, AJE, 2006, 164: 1199-1208)
- Numerous reports on associations between neighbourhood deprivation and violent persons and acts of violence in US studies
- Little evidence of contextual effects on individual violent behaviour in UK population for intervention and planning for public protection

## Study Data

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- National survey of community men (18 – 64 years old) in England, Scotland and Wales in 2005
  - Random sample drawn based on postal area stratification (494 areas in total), with over sampling of young men
  - 3025 participants
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# Comparison to national survey (2001) and Census: Age distributions



# Outcome Measures

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**PERPETRATOR:** Self-reported violent incidents in past 5 years and self-reported any previous violent convictions

**Outcome1:** Any violent incidents in past 5 years – “general violence” (binary)

**Outcome2:** 3 or more violent incidents, previous conviction of violence, or both, - “persistent violence” (binary)

**VICTIMISATION:** Self-reported victim of any physical attack with injury, stalking, sexual assault, workplace and domestic violence

**Outcome3:** Any reported victimisation in past (binary)

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# Individual socio-economic position (proxy)

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- **Income scale (ordinal)**
  - **Without higher education (binary)**
  - **Living in poor area (binary)**
  - **Unemployed (binary)**
  - **Rented accommodation (binary)**
  - **Not in VERY good health (binary)**
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# Measure of area deprivation

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Multiple Deprivation Index (IMD, 2004, UK National Statistics Office), covering following domains

- Income (22.5%)
- Education/skill/training (13.5%)
- Living environment (9.3%)
- Employment (22.5%)
- Housing & services (9.3%)
- Health & disability (13.5%)
- Crime (9.3%)\*

\* Differed in Scotland

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# Psychiatric morbidity measures

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## Mental health

- Antisocial personality disorder (ASPD, DSM IV)
- Level of depression (Beck: mild, medium, severe)

## Drinking problems

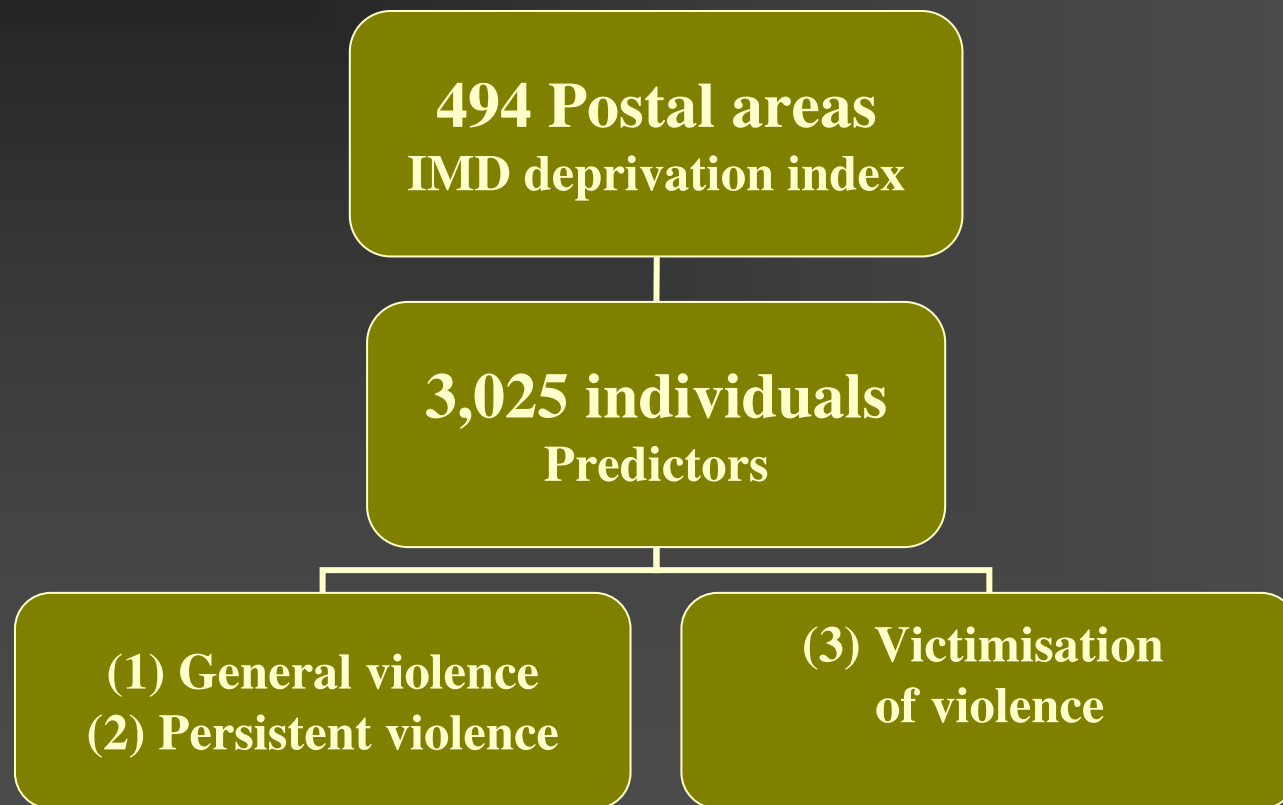
- Hazardous drinking (AUDIT score >8, binary)
  - Alcohol dependent (SADQ: mild, medium, severe)
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## Comparison to National Survey (2001)

<b>Measures (weighted)</b>	<b>This study (2005) N=3,025, 18-64 years</b>	<b>ONS Survey (2001) N=3,660, 18-64 years</b>
<b>Age: Mean (SD)</b>	<b>33.2 (11.8)</b>	<b>40.0 (12.9)</b>
<b>Unemployed: %</b>	<b>9.1</b>	<b>3.8</b>
<b>Ethnic: %</b>	<b>4.9</b>	<b>7.7</b>
<b>ASPD: %</b>	<b>19.6</b>	<b>6.7</b>
<b>Hazardous drinking: %</b>	<b>49.4</b>	<b>39.9</b>
<b>Alcohol dependence: %</b>	<b>36.8</b>	<b>13.2</b>
<b>General violence: %</b>	<b>28.5</b>	<b>18.4</b>
<b>Victimisation: %</b>	<b>21.8</b>	<b>10.8</b>

# Data structure



# Data analysis

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- Three-level logistic model for
    - Quantifying variability of outcome measures among areas
    - Simultaneous analysis of violence and victimisation to take into account their association when comparing different effects of other covariates for violence and victimisation
    - Effects of the area level deprivation variable and cross-level interactions
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# Results

## Area level variation of outcomes (SE)

Models	General violence	Persistent violence	Victimisation
A: Unadjusted	0.217 (0.063)	0.182 (0.072)	0.214 (0.076)
B: Adjusted for (1)	0.253 (0.072)	0.214 (0.079)	0.247 (0.082)
C: Adjusted for (1) & (2)	0.238 (0.079)	0.176 (0.084)	0.270 (0.089)
D: Adjusted for (1), (2) & (3)	0.212 (0.080)	0.181 (0.087)	0.215 (0.085)
E: Adjusted for (1) – (4)	0.211 (0.080)	0.179 (0.087)	0.211 (0.084)

- (1) Individual socio-economic position + age
- (2) Mental health measures + age
- (3) Alcohol use measures + age
- (4) Area IMD + age

# Effects of individual socio-economic position

(adjusted OR in Model E, \* p<0.05)

Individual deprivation	General violence	Persistent violence	Victimisation
Age	<b>0.96*</b>	<b>0.98*</b>	1.01
Income scale	1.01	1.04	<b>1.31*</b>
Without higher education	1.24	1.22	0.85
Living in poor area	1.26	1.25	<b>1.56*</b>
In rented property	1.16	1.23	<b>1.34*</b>
Unemployed	1.25	1.09	0.91
Not in very good health	1.00	1.07	<b>1.31*</b>

# Effects of mental health

(adjusted OR in model E, \*  $p < 0.05$ )

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Predictors	General violence	Persistent violence	Victimisation
ASPD	5.25*	4.57*	3.51*
Depression			
Mild	1.67*	1.33	1.46*
Medium	1.35	1.74	2.25*
Severe	1.66	2.19	0.82

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# Effects of alcohol problems

(adjusted OR in Model E, \*  $p < 0.05$ )

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Predictors	General violence	Persistent violence	Victimisation
Hazardous drinking	2.65*	2.29*	1.35*
Alcohol dep.			
Mild	1.82*	1.62*	1.37*
Medium	1.95*	1.62	0.95
Severe	0.97	1.60	0.92

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## Cumulative effects of covariates: baseline prevalence of violent outcomes (%)

Models	General violence	Persistent violence	Victimisation
A: Unadjusted	29.3	20.7	21.0
B: Adjusted for (1)	30.9	14.9	17.4
C: Adjusted for (1) & (2)	30.4	13.4	16.2
D: Adjusted for (1), (2) & (3)	15.4	6.6	10.7
E: Adjusted for (1) - (4)	15.4	6.6	10.6

- (1) Individual socio-economic position + age
- (2) Mental health measures + age
- (3) Drinking problem measures + age
- (4) Area IMD + age



# Effects of area deprivation (IMD)

Models	General violence	Persistent violence	Victimisation
<b><u>Fixed effect</u></b>			
Unadjusted OR	1.002	1.002	0.997
Adjusted OR	1.002	1.002	0.997
<b><u>Area variation</u></b>			
Without IMD	0.212	0.182	0.214
With only IMD	0.241	0.155	0.225
With all covariates	0.212	0.179	0.211

## Findings (already known)

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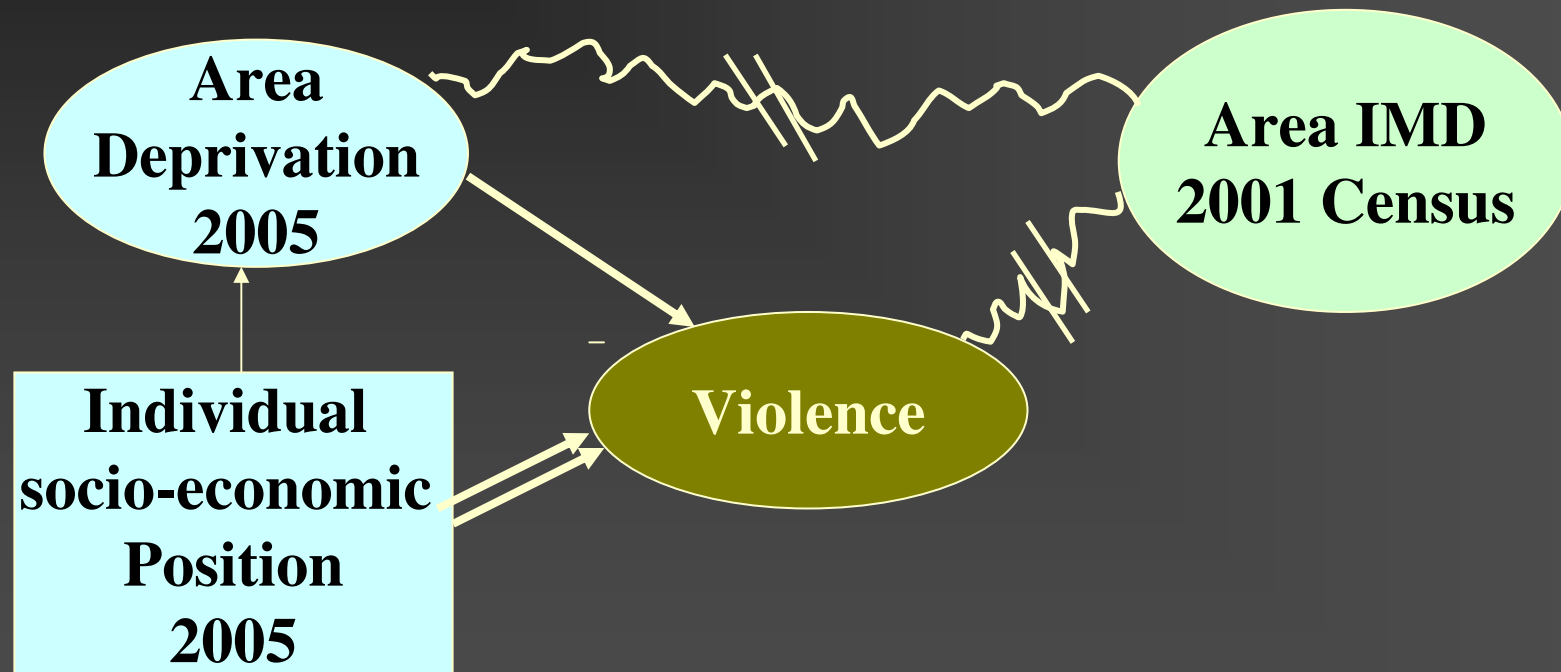
- Drinking problems were the strongest risk factors associated with violent outcome among British men;
  - ASPD was strongly associated with violent outcome;
  - Depression and individual socio-economic position had more impacts on victimisation than on violent behaviour;
  - Half of general violence and victimisation, and over one-third persistent violence were attributed to drinking problems.
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## Findings (new)

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- All violent outcomes varied significantly across areas.
  - Variation of violence outcome was not explained by individual socio-economic position, drinking problems, mental health, or area deprivation.
  - Model estimates demonstrated no association between area deprivation and individual violence.
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# Why is area deprivation not associated with individual violence?



## Other possible reasons

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- Area boundary too large to separate poor from wealthy small areas
  - IMD too broad to reflect specific link between area poverty and individual behaviour
  - Sample not representative at the area level
  - Area size in the sample too small to have sufficient statistical power
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# Conclusion

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- This study further confirmed known risks (young age, drinking problem and mental dysfunction) of violent behaviour in British men.
  - Rate of violence varied among areas, but no clear evidence for contextual effects on individual violence.
  - Further investigations over the definition of deprivation measures, boundary of areas, sampling design & field work into drawing samples are required.
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