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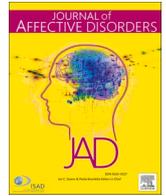
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## Research paper

# Violence against older people and associations with mental health: A national probability sample survey of the general population in England

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## ABSTRACT

**Background:** Official estimates of violence prevalence in England exclude older people. There are few studies of elder abuse and these excluded violence from acquaintances and strangers and lack comparability with younger adults.

**Objectives:** To estimate prevalence of past-year violence victimisation in older people, identify factors associated with violence in older age, quantify the extent to which experience of violence in older people was associated with common mental disorder (CMD).

**Study design/methods:** Analysis of a 2014 general population probability sample survey of 2570 adults aged 60+ and 4484 16–59 year olds. Modified version of the Conflict Tactics Scale measured domestic violence and List of Threatening Experiences captured bullying and serious assault. CMD were assessed using the revised Clinical Interview Schedule. Associations were examined using regression models adjusted for childhood victimisation and other adversities.

**Results:** 2.0 % ( $n = 52$ , CI:1.4–2.6) of older people experienced violence in the past year, with intimate partner violence the most prevalent form. Older people of non-white ethnicity, those who were socially isolated or lonely, and the formerly married were more likely to experience violence. Violence was associated with CMD in older people (adjusted odds ratio 2.2, CI:1.0–4.8), controlling for impairments, adversities and other factors.

**Conclusion:** Violence, especially from an intimate partner, is evident in later life and strongly associated with poor mental health. Better instruments for the identification of violence and abuse in older people in research and safe enquiry in practice settings are needed, with recognition of and attention to ethnic and other inequalities among older people in exposure.

## 1. Introduction

While violence and abuse are established risk factors for poor mental health (Lagdon et al., 2014), research has focused on the effects of violence exposure during childhood (Hughes et al., 2017) and among people of working age (McManus et al., 2022). Experience of violence in older age can also harm health or exacerbate existing conditions, increasing the likelihood of admittance to hospital or residential settings (locations of further vulnerability), and earlier mortality (Lachs et al., 1998). Due to an ageing global population, the costs and consequences of risks to health in older age will become more significant. The extent to which violence is experienced in later life in England is unclear (Cooper

et al., 2008), as is the relationship between recent experience of violence and mental health in older age. The source of official statistics on prevalence of violence, the Crime Survey for England and Wales (CSEW), excluded respondents older than 59 from its self-completion (where detailed violence data are collected) until 2017, and since 2017 excluded those aged over 74 (Office for National Statistics, 2021). Population-based studies of older people in England collect limited (Steptoe et al., 2013) or no information (Lawlor et al., 2003) on violence. One exception is the 2007 UK National Elder Abuse Study (NEAS) which examined different forms of elder abuse in people aged 66 and over living in private households in the UK (Manthorpe et al., 2007). Data on violence and abuse ‘occurring within relationships of trust’

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(World Health Organization, 2021) were collected in the NEAS. However, violence and abuse from acquaintances and strangers were not measured and because the sample comprised only older people, comparisons with the rest of the population were not possible. The lack of survey data on violence against older people in recent decades is further compounded by the extent of under-reporting of violence to police and health and social services, leading to a gap in administrative data sources. This gap limits our understanding of inequalities in the extent and nature of exposure to violence in older people and impedes understanding of its mental health impacts. The consequences of violence on mental health may accumulate over years and be substantial in later life. Older people may have reduced resilience and social resources (Band-Winterstein and Eisikovits, 2009), with experience of violence creating a double burden for those already in poor health (Gerino et al., 2018) and vulnerable to further deterioration. Finally, people may experience multiple adversities in their lives; for example, violence often co-occurs with socioeconomic strain, poor housing, illness and functional limitations, loneliness and isolation, and other adversities (including abuse in childhood) associated with mental health (Vink et al., 2008). To examine the relationship between violence and mental health, such adversities need to be accounted for.

### 1.1. Aims

We used data from the nationally representative Adult Psychiatric Morbidity Survey (APMS) 2014 to examine experience of violence and common mental disorder (CMD) in adults aged 60 and over living in private households in England, compared with younger adults (aged 16–59). Our aims were to a) profile the characteristics and circumstances of older and younger people, including in terms of exposure to violence; b) identify factors associated with recent experience of violence in older age; and c) quantify the extent to which past year experience of violence in older people was associated with CMD, adjusting for childhood victimisation, loneliness, and other adversities.

## 2. Method

### 2.1. Sampling and procedure

The 2014 APMS probability sample included household residents in England aged 16 and over, with no upper age limit to participation. Those living in communal or institutional care homes, temporary housing, or sleeping rough, were out of scope. The survey adopted a multistage sampling design based on the national Small User Postcode Address File. Full details of the methodology are published elsewhere (McManus et al., 2020). Data collection took place between May 2014 and September 2015. The final sample comprised 7546 participants with a response rate of 57%. Verbal informed consent was obtained from all participants. The interviews were carried out face-to-face in people's own homes, by trained interviewers, and averaged 1.5 h. Some sensitive information was collected through computer-assisted self-completion interview.

### 2.2. Measures

#### 2.2.1. Exposure: violence and abuse in the past year

The primary exposure was past-year experience of violence or abuse from an intimate partner or family member, and/or bullying or serious assault from any type of perpetrator. Experience of violence and abuse from a current or former partner was established in the self-completion section of the interview using questions based on the Crime Survey for England and Wales (CSEW), and originally drawn from the Conflict Tactics Scale (CTS) (Straus, 2017). The items spanned physical, sexual, emotional and economic violence and abuse (see supplementary Fig. SA for list). The questions on IPV were asked of everyone who has ever had a partner ('any boyfriend or girlfriend, as well as a husband, wife, or civil

partner'). Individuals who had never had a partner were coded as having not experienced intimate partner violence (IPV). Variables were derived indicating experience (yes/no) of any type of violence or abuse from an intimate partner in the past year and as an adult.

Experience of violence and abuse from a family member other than an intimate partner was assessed using similar items (see supplementary Fig. SA). The derived variable indicated experience (yes/no) of any type of violence and abuse from a family member in the past year.

'Any violence, abuse, bullying, or serious assault' variable included sexual violence from any perpetrator type (partner, ex-partner, family, colleague, acquaintance, stranger, and others) and the items from an adapted version of The List of Threatening Experiences (LTE) (Brugha et al., 1985) for 'bullying', 'violence at home', 'sexual abuse', and 'serious assault' from any type of perpetrator in the past year (yes/no). Follow-up questions established the timeframe for the LTE experiences, we included those reporting each having occurred in the past six months. Participants were also asked about experiences of physical, sexual and emotional violence and abuse as a child, with a derived variable indicating any such experience (yes/no) (supplementary Fig. SA).

#### 2.2.2. Outcome: common mental disorder in the past week

Common mental disorders (CMD) were assessed in relation to the past week, using the Clinical Interview Schedule Revised (CIS-R) (Lewis et al., 1992). This identified six CMD: depressive episode, mixed anxiety/depression, generalized anxiety disorder (GAD), panic disorder, phobic disorder, and obsessive-compulsive disorder (OCD). CMD was indicated by the presence of any of the six types of CMD assessed on the CIS-R in the past week.

#### 2.2.3. Covariates: current health, social and economic context

**2.2.3.1. Physical and cognitive impairments.** Participants were shown a card listing physical health conditions and were asked whether a health professional had told them that they had any. A binary variable was derived indicating presence of at least one physical health condition which participants described as having limited their daily activities in the past year (0/1+). Participants were asked about hearing and sight impairments, with variables derived indicating whether each were both currently present and limiting. To capture the extent of multi-morbidity in older age, impairment was further indicated by the number of activities of daily living (ADL) participants reported needing assistance with (coded to 0, 1, 2+). The modified Telephone Interview for Cognitive Status (TICS-M) was administered face-to-face to participants aged 60 and over. It tests orientation, concentration, immediate and delayed memory, naming, calculation, comprehension and reasoning. A lower score denotes possible impaired cognitive functioning (Seo et al., 2011). Past year alcohol dependence was screened using the Alcohol Use Disorders Identification Test. A score of 8 or more indicating hazardous or potentially harmful use (Saunders et al., 1993).

**2.2.3.2. Social context, discrimination and caring responsibilities.** Agreement with a statement from the Social Functioning Questionnaire (Tyrer et al., 2005) ('I feel lonely and isolated from other people') was used to indicate loneliness and social isolation. A dichotomous variable was generated ('very much/sometimes', 'not often/not at all'). Social network size was indicated by asking: 'Thinking about all the people who do not live with you and whom you feel close to or regard as good friends, how many did you communicate with in the past week?' Responses were categorised into 0–2, 3 or 4, and 5 or more. Perceived social support was indicated if participants responded 'yes' to the statement 'There are people I know, among my family and friends who make me feel an important part of their lives'. To measure perceived discrimination based on age, participants reported if they had been unfairly treated in the past year because of their age (yes/no).

Participants were asked if they provided informal (unpaid) care (yes/no) to family members, friends, neighbours or others due to the latter having a long-term physical or mental ill-health or disability, or problems related to age.

**2.2.3.3. Demographic and socioeconomic factors.** Participant age was grouped for analyses (16–59, 60–74, 75 or over). Older age was defined in the current study as 60 and over for two reasons. Firstly, this is a definition used by the World Health Organisation (WHO) (World Health Organization, 2021), and secondly this is the age-group historically excluded from the CSEW self-completion and therefore the group for which data on violence is missing. Participants self-reported gender (women, men), marital or cohabitation status (single, married/cohabiting, separated/divorced/widowed), and ethnicity. Ethnicity was self-ascribed to one of 14 categories based on the Census, and grouped for analysis into White British; White other; Black/Black British; Asian/Asian British; and Mixed, multiple or other ethnic groups. For regression analysis, due to sample size constraints ethnicities were grouped into White and Other. Socioeconomic context was captured with housing tenure (owner-occupier, social renter, private or other) and participants' employment status (employed, unemployed, retired/other). Participants were also asked about their household composition (live alone, live with one other person, three or more people in home) and two indications of housing quality: whether their home is cold or moldy. Area level deprivation was measured using quintiles based on ranked English Index of Multiple Deprivation (IMD) scores (Ministry of Housing Communities Local Government, 2019). The Census-derived indices of deprivation measure relative deprivation in small areas in England called lower-layer super output areas.

#### 2.2.4. Statistical analysis

Data were weighted to take account of the survey's complex design, selection probabilities, and patterns of non-response, so that the results are representative of the household population. Population control totals were drawn from the UK Office for National Statistics population estimates for age by sex and region. Unweighted base sizes are presented. Descriptive profiles (demographic, social, health, and economic characteristics) and the prevalence of violence in younger (16 to 59) and older (60 or older) people in England were produced. Additionally, estimates for associations between characteristics, experience of violence in the past year, and the prevalence of CMD were calculated. The statistical significance of differences between groups was indicated both with a *p*-value generated through unadjusted binary logistic regressions, and by reviewing whether 95 % confidence intervals (CI) overlapped.

Two sets of multivariable regression analyses were run separately based on older people (aged 60 and over) and on those aged 16–59 (see supplementary Tables S3–S4). One set of analyses had experience of violence as its dependent variable, and one set of analyses had CMD as its dependent variable. Each set of analyses comprised three models. Model 1 adjusted for gender, age, ethnic group, marital group, tenure, and ADLs. For reasons of restricted sample size and to avoid collinearity, key indicators were selected based on unadjusted associations with exposure and outcome and representing a range of domains (demographic, socioeconomic, and health). Tenure was selected to represent the socioeconomic domain, given the precarity faced by older people who do not own their own home. Number of ADLs need assistance with was selected to represent health impairment, given the number (0, 1, 2+) captures both functional limitations to daily life and the graduated multimorbidity aspect of impairment. Model 2 further adjusted for loneliness and isolation. This was to identify whether loneliness and isolation account for some of the associations in older people, and because loneliness and isolation may contribute to both the onset of CMD and violence (Barnes et al., 2022). For similar reasons, Model 3 adjusted for experience of childhood abuse, in addition to other factors in Model 1.

Missing data were minimal and mostly resulted from participants not carrying out the self-completion: 461 did not respond to the questions on experience of violence because of this. A further 24 participants did the self-completion but chose not to respond to these specific items, and 6 responded 'don't know'. They were excluded from analyses, yielding an analytic sample of 7054. Non-response in the self-completion was higher in older participants, and is examined elsewhere (McManus et al., 2019). Analyses were conducted in SPSS version 21.0 (IBM, 2017) and Stata version 14.1 (StataCorp, 2015).

### 3. Results

Characteristics of the 2014 sample are provided in Table 1 (with additional, contextual profiling in Supplementary Table S1). A total of 2570 participants were 60 years old and over. They were more likely to be White British (93.7 %) than people aged 16 to 59 (76.6 %), and to be married or divorced, separated or widowed. The majority of older participants were retired, and they were significantly more likely to live alone, in accommodation they owned, had homes of better quality, in less deprived areas, and had less financial strain than younger people. Older participants experienced multiple aspects of physical and cognitive morbidity: they were more likely to need assistance with multiple activities of daily living (ADLs), have limiting physical health conditions, and have limiting hearing and sight impairments, than the younger people. Participants aged 65 and over were tested using the TICS-M, and one in ten (10.4 %) had scores indicative of some possible impaired cognitive functioning. Older participants were also more likely than younger ones to have caring responsibilities due to others' health conditions. The older group, however, were less likely to have CMD or to screen positive for hazardous or harmful use of alcohol, and were also less likely to feel lonely and isolated or to report experiencing discrimination due to age, than the younger group.

Table 2 presents the prevalence of past-year violence in people aged 60 and over, compared with those aged 16 to 59 (for lifetime prevalence see supplementary Table S2). 2.0 % ( $n = 52$ ; 95 % CI: 1.4–2.6) of participants aged 60 or over reported any experience of violence, abuse, bullying, or serious assault in the past year, compared with 9.9 % of those aged 16–59. All types of violence in the past year were less prevalent in older than in younger people. Among people aged 60 and over, IPV was more common (1.3 %,  $n = 32$ ; 95 % CI: 0.9–1.9) than violence from other family members (0.4 %,  $n = 11$ ; 95 % CI: 0.2–0.7). Violence from an intimate partner as an adult, and violence and abuse as a child, were also less likely to be reported by older than younger people.

Among people aged 60 and over, adjusted regression analyses indicate that non-white ethnicity, and being divorced, separated, or widowed were associated with elevated odds of experiencing violence in the past year, while the odds of violence were lower in those aged 75 and over than in 60 to 74 age group (Model 1, Table 3). Other variables including gender, tenure and ADLs were not significantly associated with experience of violence in the past year. When loneliness and isolation was added to the model (Model 2, Table 3) other odds ratios remained similar to Model 1, and were elevated in those who reported isolation and loneliness (AOR 3.9). When experience of childhood abuse was included (Model 3, Table 3), other odds ratios remained similar to Model 1, and were elevated in those who reported childhood abuse (AOR 3.4).

Table 4 shows prevalence rates and unadjusted and adjusted odds ratios (OR) of CMD in older people. Among older people exposed to violence in the past year, 26.4 % had a CMD, compared with one in ten (10.2 %) among those not exposed to violence. With adjustment for demographic and socioeconomic factors and impairment, the odds of CMD remained elevated in those who experienced violence (AOR 3.1, 95 % CI: 1.6–6.0). Odds of CMD were also greater in women than men, those aged 60–74 than those aged 75+, among social renters, and in those who needed assistance with at least two activities of daily living (ADLs). Further adjustment for loneliness and isolation (Model 2)

**Table 1**  
Demographic, social, and economic characteristics of younger (16–59 years) and older (60 or over) people in England.

Characteristics		Age group				Total		Sig. p value
		16 to 59 (n = 4484)		60 and over (n = 2570)		16+ (7054)		
		n	%	n	%	N	%	
Age	16 to 59	4484	100			4484	72.9	
	60 to 74			1690	67.6	1690	18.3	
	75 and over			880	32.4	880	8.8	
Gender	Men	1744	49.7	1131	47.5	2875	49.1	0.104
	Women	2740	50.3	1439	52.5	4179	50.9	
Ethnic group	White British	3595	76.6	2413	93.7	6008	81.2	<0.001
	White other	316	8.0	81	3.1	397	6.6	
	Black/Black British	154	3.7	25	1.2	179	3.0	
	Asian/Asian British	286	8.7	34	1.6	320	6.8	
	Mixed, multiple, other	123	3.1	8	0.3	131	2.3	
Marital status	Married or cohabiting	2567	60.4	1366	66.9	3933	62.2	0.027
	Single	1332	32.1	166	4.7	1498	24.7	
	Divorced, separated or widowed	585	7.5	1038	28.4	1623	13.2	
Tenure	Owner occupied	2623	58.2	2020	81.3	4643	64.5	<0.001
	Social renter	759	16.2	375	12.9	1134	15.3	
	Private or other	1075	25.5	163	5.9	1238	20.2	
	None	3766	85.2	1556	62.6	5322	79.1	<0.001
Need assistance with Activities of Daily Living (ADL)	1 ADL	281	6.4	354	13.3	635	8.3	
	2 or more ADLs	437	8.4	660	24.1	1097	12.6	
Mental health	Any anxiety or depressive disorder	952	19.2	283	10.5	1235	16.8	<0.001
	Lonely and isolated	1055	20.8	427	14.1	1482	19.0	<0.001

**Table 2**  
Experiences of violence and abuse reported by younger and older people in England.

Past year	Age group				Total	
	16 to 59 (n = 4484)		60 and over (n = 2570)		N = 7054	
	n	% (95 CI)	n	% (95 CI)	N	% (95 CI)
Violence and/or sexual abuse from an intimate partner	260	5.2 (4.6–5.8)	32	1.3 (0.9–1.9)	292	4.1 (3.7–4.6)
Violence from other family member	77	1.8 (1.4–2.3)	11	0.4 (0.2–0.7)	88	1.4 (1.1–1.8)
Any domestic violence (partner/other family)	315	6.6 (5.9–7.4)	38	1.5 (1.1–2.1)	353	5.2 (4.7–5.8)
Any violence, abuse, bullying, or serious assault*	452	9.9 (9.0–10.9)	52	2.0 (1.4–2.6)	504	7.8 (7.1–8.5)
As an adult						
Violence from an intimate partner	1292	24.2 (22.8–25.5)	408	13.9 (12.6–15.4)	1700	21.4 (20.4–22.5)
As a child						
Any physical, emotional, or sexual violence and abuse as a child	1119	22.8 (21.4–24.4)	467	18.2 (16.5–20.0)	1586	21.6 (20.4–22.8)

\* Inclusive category, including from a stranger or person from other non-domestic relationship.

attenuated the odds of CMD associated with past year experience of violence, but they remained significant (AOR 2.2, 95 % CI:1.0–4.8). Adjustment for childhood victimisation (Model 3) also attenuated somewhat the odds of CMD associated with past year experience of violence however, they again remained significant (AOR 2.6, 95 % CI:1.3–5.2).

#### 4. Discussion

Violence is an established risk for poor mental health in children and working-age adults; this analysis addressed the evidence gap on older people. While less likely than younger people to have had recent experience of violence, we show that older people also were victims, that violence was often from an intimate partner; that there were ethnic inequalities in rates; and that associations with CMD were strong, and persisted when other adversities were controlled for.

The older people in our national probability sample were drawn from the population living in private households, excluding some of the most marginal and victimised: those living in institutional settings or homeless (Yon et al., 2019). We show that older people in England living in their own homes tend to face less economic precarity than younger generations. They were generally wealthier than younger people, and reported poorer physical health but less CMD and loneliness. Although loneliness has widely been viewed as more prevalent in later life, research has long found associations with age to be more complex

(Luhmann and Hawkey, 2016). Our results are consistent with this and may be explained by the effects of protective factors such as better socioeconomic and housing situation and better mental health.

All types of violence were found to be less prevalent in older than in younger people. This difference may be in part attributable to a healthy survivor effect: those exposed to violence in earlier life (particularly severe and repeated violence) are less likely to survive into older age (Hughes et al., 2017) or to live independently in their own home (Yon et al., 2019). Recall bias will also be a factor, older people may repress or forget more distant or less severe episodes of violence (Yoshihama and Gillespie, 2002). Additionally, older people may be less able or willing to recognise that have been victims of some types of violence (SafeLives, 2016).

Violence from an intimate partner was the most common form reported. Our analyses could not distinguish the extent to which this comprised a continuation of IPV into older age (Band-Winterstein and Eisikovits, 2009) or violence that onset or compounded in later life, complicated by retirement, disability, and caring responsibilities either for and from a partner (Gerino et al., 2018). Older people may also find it more difficult to leave abusive relationships (SafeLives, 2016). Unlike NEAS, our definition of IPV included violence from former partners. Women who leave abusive relationships remain at increased risk of violence from their ex-partners (Fleury et al., 2000), consistent with our results showing elevated rates of recent violence among the formerly-married.

**Table 3**

Factors associated with experiencing violence in the past year in older people (60 years or more): prevalence, and unadjusted and adjusted odds ratios.

		Any violence in the past year			Unadjusted OR of violence		Adjusted OR of violence - Model 1		Adjusted OR of violence - Model 2		Adjusted OR of violence - Model 3	
		N	n	% (95 % CI)	OR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Gender	Men	1131	21	1.7 (1.1–2.6)	1		1		1		1	
	Women	1439	31	2.2 (1.5–3.2)	1.3	0.7–2.4	1.3	0.6–2.5	1.2	0.6–2.4	1.3	0.65–2.50
Age	60 to 74	1690	42	2.5 (1.8–3.40)	1		1		1		1	
	75 and over	880	10	0.9 (0.5–1.7)	<b>0.4</b>	<b>0.2–0.7</b>	<b>0.3</b>	<b>0.1–0.6</b>	<b>0.3</b>	<b>0.2–0.6</b>	<b>0.4</b>	<b>0.2–0.7</b>
Ethnic group	White	2413	42	1.7 (1.2–2.3)	1		1		1		1	
	Other	148	10	6.0 (3.3–10.8)	<b>3.7</b>	<b>1.8–7.9</b>	<b>3.6</b>	<b>1.7–7.4</b>	<b>3.3</b>	<b>1.7–7.4</b>	<b>3.7</b>	<b>1.8–7.6</b>
Marital group	Married or cohabiting	1366	23	1.7 (1.1–2.6)	1		1		1		1	
	Single	166	3	2.4 (0.7–7.9)	1.5	0.4–5.8	1.7	0.4–7.1	1.1	0.4–6.7	1.6	0.4–7.1
	Divorced, separated, widowed	1038	26	2.5 (1.7–3.7)	1.5	0.8–2.8	<b>1.8</b>	<b>1.0–3.4</b>	<b>1.5</b>	<b>1.0–3.4</b>	1.8	1.0–3.3
Tenure	Owner occupied	2020	38	1.9 (1.3–2.6)	1		1		1		1	
	Social renter	375	11	2.8 (1.6–5.0)	1.5	0.7–3.1	1.2	0.6–2.5	1.1	0.5–2.4	1.2	0.5–2.5
	Private renter	163	2	0.7 (0.2–2.7)	0.4	0.1–1.6	0.3	0.1–1.2	0.2	0.1–1.2	0.3	0.1–1.2
Needs assistance with ADLs	None	1556	29	1.8 (1.2–2.6)	1		1		1		1	
	1	354	9	2.5 (1.3–4.8)	1.4	0.6–3.2	1.5	0.7–3.3	1.4	0.6–3.2	1.5	0.7–3.3
Isolated and lonely	2 or more	660	14	2.1 (1.2–3.7)	1.2	0.6–2.4	1.0	0.5–2.2	0.8	0.3–1.8	1.0	0.5–2.1
	No	2142	31	1.4 (0.9–1.9)	1		1		1		1	
Childhood abuse	Often or always	427	21	5.6 (3.4–8.9)	<b>4.3</b>	<b>2.2–8.3</b>			<b>3.9</b>	<b>1.8–8.4</b>		
	No	2080	31	1.3 (1.0–1.9)	1		1		1		1	
	Yes	467	21	4.9 (3.0–7.8)	<b>3.8</b>	<b>2.01–7.11</b>					<b>3.3</b>	<b>1.7–6.2</b>

Model 1: includes gender, age, ethnic group, marital group, tenure, ADLs.

Model 2: model 1 variables plus isolation/loneliness.

Model 3: model 1 variables plus experience of abuse in childhood.

Significant associations are in bold

**Table 4**

Factors associated with CMD in older people (60 years or more): prevalence and unadjusted and adjusted odds ratios.

		Anxiety or depressive disorder (CMD)			Unadjusted OR of CMD		Adjusted OR of CMD Model 1		Adjusted OR of CMD Model 2		Adjusted OR of CMD Model 3	
		N	n	%	OR	95 % CI	AOR	95 % CI	AOR	95 % CI	AOR	95 % CI
Violence	None	2518	268	10.2	1		1		1		1	
	Any VA in the past year	52	15	26.3	<b>3.15</b>	<b>1.7–5.8</b>	<b>3.05</b>	<b>1.6–6.0</b>	<b>2.2</b>	<b>1.0–4.8</b>	<b>2.6</b>	<b>1.3–5.2</b>
Gender	Men	1131	93	7.4	1		1		1		1	
	Women	1439	190	13.3	1.9	1.4–2.5	1.8	1.3–2.5	1.8	1.3–2.5	1.8	1.3–2.5
Age	60–74	1690	215	11.8	1		1		1		1	
	75 and over	880	68	7.8	<b>0.7</b>	<b>0.5–0.9</b>	<b>0.4</b>	<b>0.3–0.6</b>	<b>0.4</b>	<b>0.3–0.6</b>	<b>0.5</b>	<b>0.3–0.7</b>
Ethnic group	White British	2413	259	10.2	1		1		1		1	
	Other	148	21	14.2	1.5	1.0–2.3	1.0	0.6–1.8	0.9	0.5–1.6	1.0	0.6–1.8
Marital group	Married or cohabiting	1366	140	10.0	1		1		1		1	
	Single	166	20	11.4	1.1	0.7–1.9	0.8	0.4–1.4	0.4	0.2–0.8	0.8	0.4–1.5
	Divorced, separated, widowed	1038	123	11.4	1.2	0.9–1.5	0.8	0.6–1.1	<b>0.6</b>	<b>0.4–0.8</b>	0.8	0.5–1.1
Tenure	Owner occupied	2020	182	8.8	1		1		1		1	
	Social renter	375	74	19.5	<b>2.5</b>	<b>1.9–3.3</b>	1.7	1.3–2.6	1.8	1.2–2.5	1.8	1.3–2.6
	Private renter	163	24	13.7	1.8	1.1–2.9	1.7	0.9–3.0	1.4	0.7–2.7	1.6	0.9–2.9
Needs assistance with ADLs	None	1556	104	6.3	1		1		1		1	
	1	354	34	9.0	1.7	1.1–2.6	1.6	1.0–2.7	1.5	0.9–2.6	1.7	1.0–2.7
Isolated and lonely	2 or more	660	145	22.2	<b>4.4</b>	<b>3.3–6.0</b>	<b>4.7</b>	<b>3.3–6.7</b>	<b>4.1</b>	<b>2.9–6.0</b>	<b>4.7</b>	<b>3.3–6.8</b>
	No	2142	148	7.0	1		1		1		1	
Childhood abuse	Often or always	427	134	31.5	<b>6.1</b>	<b>4.6–8.2</b>			<b>5.5</b>	<b>3.9–7.7</b>		
	No	2080	193	9.2	1		1		1		1	
	Yes	467	89	16.7	<b>2.0</b>	<b>1.5–2.65</b>					<b>1.8</b>	<b>1.3–2.5</b>

Model 1: includes violence, gender, age, ethnic group, marital group, tenure, ADLs.

Model 2: model 1 variables plus isolation/loneliness.

Model 3: model 1 variables plus experience of abuse in childhood.

Significant associations are in bold

Our results also show that older people who experienced violence and abuse as a child from a parent or caregiver continued to experience worse mental health and elevated rates of recent violence in old age. While existing evidence established links between childhood abuse and re-victimisation as an adult (Butler et al., 2020), the current analysis shows the shadow extends through to late life and highlights the huge potential impact of early years intervention.

Pronounced ethnic inequalities emerged: we found rates of violence

to be highest in the combined minority ethnic group. Little attention has been paid to elder abuse in people from minority ethnic groups, despite additional risk factors such as language, restricted social networks, racism, discrimination, marginalisation, and scarcity of appropriate service provision (Manthorpe and Bowes, 2010). Our data were under-powered to properly address variation by ethnic group, and the intersectional effects of age and ethnicity urgently need to be further explored and integrated into policy and service responses. While

existing research has found domestic violence to be more prevalent in women than men of working age (3), in this sample of older people gender was not a significant predictor of victimisation.

Previous research identified loneliness and isolation as both predictors (Barnes et al., 2022) and outcomes (Winterstein and Eisikovits, 2005) of violence in the general population. Our results show this association remains evident among older people, although as a cross-sectional study causal direction could not be delineated. Overall, loneliness and isolation remain key indicators of vulnerability to target in reducing health inequalities.

Our analysis suggested that for younger adults (16–59) more risk factors were associated with violence than for older people, these included being a woman, single, not owning a home, and needing assistance with ADLs (Table S3). Healthy survivor effects, recall bias, and underreporting among older people might partially explain the differences. Furthermore, these may be attributable to demographic differences and differences in the types of violence experienced by younger and older adults (Flatley, 2018). Additionally, there was a lack of statistical power for examining differences for specific types of violence (e.g., violence from an intimate partner or family member) by sociodemographic characteristics such as gender.

Consistent with other studies (Gerino et al., 2018), higher rates of CMD were evident among older victims of violence compared with those not exposed to violence. While depression and anxiety disorders may predict subsequent victimisation (Bhavsar et al., 2020), longitudinal research in younger populations also shows that violence contributes to the onset of mental disorders and supports a stress-response mechanism (Ouellet-Morin et al., 2015). Longitudinal studies on the impact of violence on mental health in later life are warranted.

#### 4.1. Strengths and limitations

This is the first analysis of violence prevalence and its relationship with mental health in older age in an English general population probability sample, since the NEAS in 2007. Unlike NEAS, the present study included violence from strangers and ex-partners. Although larger than NEAS, the sample was still too small to measure the effects of different types of violence, to examine ethnic variation, or to consider the oldest-old. People living in care homes, hospitals or who were homeless during fieldwork, who might experience increased risks of violence and mental health issues, were out of scope. Similarly, representing the experiences of older people with dementia or other forms of cognitive impairment, requires the use of alternative and sensitive research strategies. Also, people who are currently widowed and those who are divorced/separated might have different experiences of IPV and can be studied separately in the future research. The cross-sectional design limited any testing of casual relationships. The 57 % response rate raises a potential for selection bias: individuals with more severe health issues (who are also more likely to be subjected to severe violence in their lifetime) might not be able to take part in a survey. Violence is also a sensitive topic, with potential for underreporting among those who did take part.

#### 4.2. Implications

Violence remains a problem in older age, and should be better identified among this group both by surveys (such as the source of official statistics on violence, the Crime Survey for England and Wales) and service providers. IPV is among the most common forms of violence experienced by older people, with those from a minority ethnic background and formerly partnered (that is, divorced, separated, or widowed) being at elevated risk. Although rates appear lower in the older household population than in younger people, there are about 14 million people aged 60 and over in England (Office for National Statistics, 2020), and our figures suggests that at least 280,000 of them had experienced violence in the past year. This is a significant number, which may increase as the population is ageing. Targeted interventions

tailored to the needs of older people are needed as older people are known to be less likely to access domestic abuse services and resources than younger people, while available support has been found to be less tailored to their specific needs and circumstances (SafeLives, 2016; Rogers, 2016). Moreover, there is a general lack of recognition of violence victimisation among older people by health and social care professionals (SafeLives, 2016).

Given the strong link shown between violence and CMD in later life, if violence is identified in older individuals, negative implications for mental health need to be considered and appropriately responded to. If older patients present with symptoms of anxiety or depression, violence and abuse should be considered as a potential cause by health and social care services asked about discretely and investigated appropriately.

Even when controlling for wider adversities, recent exposure to violence still confers an additional and independent association with CMD in later life. Longitudinal studies designed to elucidate causal relationships between violence and health are required, adequately powered to examine the intersections of ethnicity, gender and age.

#### CRediT authorship contribution statement

**Anastasia Fadeeva:** Writing – original draft, Methodology, Conceptualization. **Ladan Hashemi:** Writing – review & editing, Validation. **Claudia Cooper:** Writing – review & editing. **Rob Stewart:** Writing – review & editing. **Sally McManus:** Writing – review & editing, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization.

#### Declaration of competing interest

RS declares research support received within the last 3 years from Janssen, GSK and Takeda. On behalf of all authors, the corresponding author states that there are no conflict of interests.

#### Data availability

The APMS dataset is lodged with the UK Data Service archive. Permission to use the dataset for this analysis was obtained from NHS Digital. Requests for further use should be made to the Data Access Request Service at NHS Digital [<https://digital.nhs.uk/services/data-access-request-service-dars>].

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jad.2024.07.073>.

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