

Abuse and neglect of older persons in seven cities in seven countries in Europe: a cross-sectional community study

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Received: 29 August 2011 / Accepted: 18 June 2012 / Published online: 3 August 2012
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Abstract

Objectives We aimed to investigate the prevalence rate of abuse (psychological, physical, sexual, financial, neglect) of older persons (AO) in seven cities from seven countries in Europe (Germany, Greece, Italy, Lithuania, Portugal, Spain, Sweden), and to assess factors potentially associated with AO.

Methods A cross-sectional study was conducted in 2009 ($n = 4,467$, aged 60–84). Potentially associated factors were grouped into domains (domain 1: age, gender, migration history; domain 2: education, occupation; domain 3: marital status, living situation; domain 4: habitation, income, financial strain). We calculated odds ratios (OR) with their respective 95 % confidence intervals (CI).

Results Psychological AO was the most common form of AO, ranging from 10.4 % (95 % CI 8.1–13.0) in Italy to 29.7 % (95 % CI 26.2–33.5) in Sweden. Second most common form was financial AO, ranging from 1.8 % (95 % CI 0.9–3.2) in Sweden to 7.8 % (95 % CI 5.8–10.1) in Portugal. Less common was physical AO, ranging from 1.0 % (95 % CI 0.4–2.1) in Italy to 4.0 % (95 % CI 2.6–5.8 %) in Sweden. Sexual AO was least common, ranging from 0.3 (95 % CI 0.0–1.1) in Italy and Spain to 1.5 % (95 % CI 0.7–2.8) in Greece. Being from Germany (AOR 3.25, 95 % CI 2.34–4.51), Sweden (OR 3.16, 95 % CI 2.28–4.39) or Lithuania (AOR 2.45, 95 % CI 1.75–3.43) was associated with increased prevalence rates of AO.

Conclusion Country of residence of older people is independent from the four assessed domains associated

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with AO. Life course perspectives on AO are highly needed to get better insight, and to develop and implement prevention strategies targeted at decreasing prevalence rates of AO.

Keywords Abuse · Older individuals · Context · Life course

Introduction

Abuse of older persons (AO) is a public health burden as regards the consequences of AO on health (Lachs et al. 1998; Acierno et al. 2010; McGarry et al. 2011). Multinational comparable data on the prevalence rate of AO are scarce (Lachs and Pillemer 2004; Mitka 2011; Penhale and Kingston 1995; Podnieks et al. 2010). Conceptual (e.g. definition of AO) and methodological differences (e.g. assessment) limit the extent to which comparisons can be made between studies (Dyer et al. 2000; Acierno et al. 2010; Cooper et al. 2006, 2008; Krienert et al. 2009). Changes in population structure indicate a potential for an upward trend in prevalence of AO because of the ageing population.

Several studies suggested prevalence rates of AO. In the USA, in 1988, a study on a random sample of 2,020 people aged 65+ in Boston was conducted assessing physical, and verbal AO, and neglect (Pillemer and Finkelhor 1988). This study determined a prevalence rate of 32 %. The evidence was gathered and synthesized by a systematic review in 2008 suggesting prevalence rates of AO between 3.2 and 27.5 % (Cooper et al. 2008). Since this systematic review, in the last 5 years, six national prevalence studies of elder abuse have been conducted investigating national samples from the USA (Acierno et al. 2010; Laumann et al. 2008), Israel (Lowenstein et al. 2009), UK (Biggs et al. 2009), Spain and Ireland (Naughton et al. 2012). These studies suggested national prevalence rates of AO. A study from the USA (Laumann et al. 2008) of people aged 57–85 years ($n = 3,005$), reported past 12 months prevalence rate for verbal abuse (9.0 %), physical abuse (0.2 %) and financial abuse (3.5 %) (Acierno et al. 2010). Another study from the USA, ($n = 5,777$, 60+) (Acierno et al. 2010), suggested past 12 months prevalence rates for emotional AO (4.6 %), physical AO (1.6 %), sexual abuse (0.6 %), financial AO (5.2 %) and for neglect (5.1 %). A national prevalence survey of AO against persons aged 65+ ($n = 1,045$) in Israel (Lowenstein et al. 2009) suggests prevalence rates among the Jewish population of Israel ($n = 948$) (1.6 % for physical/sexual AO, 14.5 % for verbal AO, 6.4 % for financial abuse and 26 % to neglect). A survey of AO towards persons aged 66 years+ ($n = 2,106$) in the UK reported past 12 months prevalence rates of AO between 0.2 and 1.1 % (psychological 0.4 %, physical 0.4 %, sexual 0.2 %, financial 0.7 %, neglect 1.1 %) comparable to the prevalence estimates from Spain (psychological 0.3 %, physical 0.2 %, sexual 0.1 %, financial 0.2 %, neglect 0.3 %) (Marmolejo 2008) and Ireland (psychological 1.2 %, physical 0.5 %, sexual 0.02 %, financial 1.3 %, neglect 0.3 %) (Naughton et al. 2012).

A major problem for comparing prevalence rates between studies is the definition of AO (Dong et al. 2010; Podnieks 2006; Acierno et al. 2010). Furthermore, it might be that not the full range of types of AO is assessed and/or an instrument with limited validity and reliability is used (Acierno et al. 2010; Fulmer 2003). To build an existing research and address the limitations of national samples, we designed a study on AO in seven cities from seven countries in Europe based on a joint definition based on the Revised Conflict Tactics Scales. We assess four domains (domain 1: age, gender, migration history; domain 2: education, occupational attainment; domain 3: marital status, living situation; domain 4: housing tenure, financial strain). We aimed to examine past 12 months prevalence rates of psychological, physical, sexual, financial AO and neglect of individuals in seven cities in Europe, and to assess the association between correlated factors and types of AO. We hypothesized that country was independently associated with AO.

Methods

Methods

Study design and setting

The ABUEL study (abuse of the elderly in Europe) is a cross-sectional community study of individuals aged 60–84 years of the general population in seven cities in Europe (Germany, Greece, Italy, Lithuania, Portugal, Spain and Sweden). The methods, sampling strategy and response rates have been described elsewhere (Lindert et al. 2011). We used random sampling methods based on municipal registries (Stuttgart, Germany; Ancona, Italy; Kaunas, Lithuania, Stockholm, Sweden; Porto, Portugal; Granada, Spain) or on the random route method (Athens, Greece).

Participants and response rate

Overall 4,467 community dwelling individuals aged 60–84 years participated in the ABUEL study. Inclusion criteria were: aged 60–84 years; no dementia or other cognitive impairments; citizens, documented migrants; living in own or rented houses; proficiency of the countries native languages. Mean response rate was 45.2 %.

Independent variables and domains

We assessed four domains of independent factors: domain 1: age, gender and migrant history; domain 2: education

and occupational attainment; domain 3: marital status and living situation; domain 4: house tenure, income, employment and financial strain.

Domain 1: age was categorized into years (60–64, 65–69, 70–74, 75–79, and 80–84). Migrant status was assessed by four questions (e.g. “place of birth”, “place of births of parents”, “nationality”, “and language spoken at home”). The interviewees which indicated another place of birth for either themselves or their parents than the country they lived in and another nationality or another language than the natives were categorized as “people with migration history”.

Domain 2: education was grouped into “less than four years”, “four years”, “5–11”, and “other”. Occupation was categorized into six categories: “high white collar”, “low white collar”, “high blue collar”, “low blue collar”, “housewife”, “armed forces”. Domain 3: we assessed marital status (“single”, “married/cohabitant”, “divorced/separated”, “widowed”); and the type of relationship to the person the interviewee was living with.

Domain 4: to assess the financial situation, we assessed ownership of property, type of income, and financial strain. “Ownership” was assessed by asking whether interviewees lived in an own property or in a rented place. Type of income asked for source of income (e.g. “pensions”, “sickness benefits”, “husband’s income”, “financial strain”, “preoccupation with how to make ends meet”) was measured in a “no/sometimes/often/always” format.

Dependent variable: abuse (psychological, physical, sexual, financial) and neglect

We assessed types of AO, and neglect with questions based on the “Revised Conflict Tactics Scale” (CTS-R) which has good psychometric properties as regards internal consistency, construct validity and discriminant validity and has been used in many studies, worldwide (Straus et al. 1996; Cooper et al. 2008). We modified the CTS and measured abuse and neglect using 52 questions with 11 questions on psychological violence, 17 questions on physical AO and physical abuse followed by injuries, eight questions on sexual AO (e.g. physically forced intercourse by the husband, performing sexual acts against the will), nine questions on financial abuse, and 13 questions on neglect. The frequency of AO (“once”, “twice”, “3–5 times”, “6–11 times”, “11–20 times”, and “>20 times”) was collapsed into a dichotomous variable (“never” vs. “ever”). This coding scheme is the same as in other studies using the Revised Conflict Tactics Scales to estimate abuse prevalence.

Assessment procedures

We obtained data between January and July 2009. Written information about local medical and social services for

older persons was provided. Follow-up support was offered and provided when needed. Ethics permission was obtained from the national or regional ethics review boards. We did not provide any monetary incentive for participating.

Statistical analysis

We carried out descriptive analyses for all data with weights to correct for the sampling design, using frequency distribution and summary measures. The independent variables consist of four domains. The dependent variable was AO. The associations between the variables were expressed as odds ratios (ORs) with the respective 95 % confidence intervals (CIs). To examine our hypothesis, that country of residence was independently associated with AO, we used multiple logistic regression models calculating adjusted odds ratios (AORs). The significance level was set at $P < 0.05$. The statistical packages SPSS 15.1 and STATA 11.1 were used.

Results

Characteristics of the study population

We collected data from 4,467 persons. Responses to factors of domain 1 indicated that 57.3 % (2,559) women (Table 1), 5.7 % (256), had a migration history (domain 1). Responses to factors of domain 2 indicated that 14.8 % (661) had an education which was lower than elementary, 39.5 % (1,092) had an elementary education, 39.5 % (1,782) an intermediate and 19.1 % (855) a higher education. Years of education varied between the place of residence of participants. 27.2 % (1,217) had high white collar or low white collar (1,214) occupation. High blue occupation had 15.8 % (570), low blue collar occupation 12.8 % and 14.7 % (656) were housewives. Responses to factors of domain 3 indicated that 6.0 % (270) were single, 65 % (2,903) were married, 7.7 % (343) were divorced or separated, 49.4 % (2,208) lived with a partner, 10.2 % (457) with a partner and with others and 10.2 % (457) with other persons. Responses to domain 4 indicated that 75.9 % (3,392) lived in an own property, and 64.6 % (2,886) were financially strained.

Prevalence rates of psychological, physical, sexual and financial AO and neglect

Psychological AO varied for men between 9.7 (Spain) and 35.6 % (Sweden), and for women between 6.9 (Italy) and 26.8 % (Germany). Physical AO varied for men between 0.78 (Italy) and 6.0 % (Sweden), and for women between 1.2 (Italy) and 4.6 % (Greece). Physical AO with injuries

Table 1 Characteristics (domain 1: age, gender, migration history; domain 2: education, occupational attainment; domain 3: marital status, living situation; domain 4: ownership, income, financial strain) of older persons living in the communities in seven cities from seven European countries) in 2009 ($n = 4,467$)

Variables	Germany ($n = 648$)		Greece ($n = 643$)		Italy ($n = 628$)		Lithuania ($n = 630$)		Portugal ($n = 656$)		Spain ($n = 636$)		Sweden ($n = 626$)		Total ($n = 4,467$)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Age (years)																
60–64	137	21.1	8	27.8	141	22.5	146	23.2	161	24.5	148	23.2	212	33.9	1,124	25.2
65–69	184	28.4	165	25.7	142	22.6	148	23.5	160	24.4	140	22.0	149	23.8	1,088	24.4
70–74	152	23.5	147	22.9	129	20.5	146	23.2	138	21.0	143	22.5	106	16.9	961	21.5
75–79	104	16.0	94	14.6	119	18.9	121	19.2	115	17.5	113	17.8	83	13.3	749	16.8
80–84	71	11.0	58	9.0	97	15.4	69	11.0	82	12.5	92	14.5	76	12.1	545	12.2
Gender																
Male	305	47.1	287	44.6	270	43.0	225	35.7	256	39.0	272	42.8	293	46.8	1,908	42.7
Female	343	52.9	356	55.4	358	57.0	405	64.3	400	61.0	364	57.2	333	53.2	2,559	57.3
Migration history																
No	561	86.6	621	96.6	615	97.9	604	95.9	639	97.4	633	99.5	538	85.9	4,211	94.3
Yes	87	13.4	22	3.4	13	2.1	26	4.1	17	2.6	3	0.5	88	14.1	256	5.7
Education																
Less than elementary	8	1.2	122	19.0	27	4.3	34	5.4	75	11.4	381	59.9	14	2.2	661	14.8
Elementary	13	2.0	200	31.1	217	34.6	147	23.3	239	36.4	83	13.1	193	30.8	1,092	24.4
Intermediate	405	62.5	261	40.6	316	50.3	283	44.9	237	36.1	73	11.5	207	33.1	1,782	39.9
Higher education	177	27.3	58	9.0	68	10.8	142	22.5	105	16.0	98	15.4	207	33.1	855	19.1
Missing	45	6.9	2	0.3	0	0.0	24	3.8	0	0.0	1	0.2	5	0.8	77	1.7
Occupational attainment																
High white collar	250	19.7	60	9.3	124	19.7	211	33.5	212	32.3	102	16.0	258	41.2	1,217	27.2
Low white collar	249	35.2	120	18.7	221	35.2	136	21.6	186	28.4	79	12.4	223	35.6	1,214	27.2
High blue collar	70	15.0	124	19.3	94	15.0	126	20.0	141	21.5	109	17.1	43	6.9	707	15.8
Low blue collar	21	10.5	111	17.3	66	10.5	122	19.4	75	11.4	127	20.0	48	7.7	570	12.8
Housewife**	41	17.7	213	33.1	111	17.7	35	5.6	41	6.3	207	32.5	8	1.3	656	14.7
Armed forces	1	1.9	15	2.3	12	1.9	113	17.9	1	0.2	12	1.9	4	0.6	45	1.0
Missing	16	2.5	0	0.0	0	0.0	3	0.5	0	0.0	0	0.0	42	6.7	58	1.3
Marital status																
Single	65	10.0	33	5.1	24	3.8	28	4.4	37	5.6	40	6.3	43	6.9	270	6.0
Married/cohabitant	418	64.5	363	56.5	508	80.9	357	56.7	420	64.0	425	66.8	412	65.8	2,903	65.0
Divorced/separated	59	9.1	43	6.7	13	2.1	53	8.4	51	7.8	26	4.1	98	15.7	343	7.7
Widowed	105	16.2	204	31.3	83	13.2	192	30.5	148	22.6	145	22.8	73	11.7	950	21.3
Living situation																
With partner*	380	58.6	244	37.9	351	55.9	269	42.7	289	44.1	280	44.0	395	63.1	2,208	49.4
With partner* and others	33	5.1	117	18.2	157	25.0	93	14.8	143	21.8	147	23.1	16	2.6	706	15.8

Table 1 continued

Variables	Germany (n = 648)		Greece (n = 643)		Italy (n = 628)		Lithuania (n = 630)		Portugal (n = 656)		Spain (n = 636)		Sweden (n = 626)		Total (n = 4,467)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
With others*	14	2.2	113	17.6	38	6.1	146	23.2	82	12.5	94	14.8	3	0.5	457	10.2
Missing	14	2.2	0	0.0	0	0.0	-	-	-	-	1	0.2	0	0.0	18	0.4
Ownership																
Own	402	62.0	489	76.0	559	89.0	622	98.7	389	59.3	536	84.3	453	72.4	3,392	75.9
Rental	233	36.0	149	23.2	69	11.0	8	1.3	267	8.4	55	8.6	169	27.0	930	20.8
Other	11	1.7	5	0.8	-	-	-	-	-	-	45	7.1	4	0.6	143	3.2
Missing	2	0.3	0	0.0	-	-	-	-	-	-	0	0.0	0	0.0	2	0.0
Income																
Pensions	500	77.2	323	50.2	466	74.2	535	84.9	405	61.7	290	45.6	420	67.1	2,519	56.4
Working	68	2.8	93	14.5	27	4.3	58	9.2	55	8.4	55	8.6	186	29.7	542	12.1
Social/sickness benefits	16	2.5	17	2.6	15	2.4	35	5.6	84	12.8	64	10.0	12	1.9	243	5.4
Partner	33	5.0	187	29.1	118	18.8	2	10.3	70	10.6	213	33.5	6	0.8	680	15.2
Other	27	4.2	23	3.6	2	0.3	-	-	40	6.6	14	2.2	2	0.3	108	2.4
Financial strain																
No	339	52.3	41	6.4	195	31.1	259	41.1	195	29.7	400	62.9	169	27.0	1,598	35.8
Yes	307	47.7	602	93.6	463	79.9	367	58.9	461	70.3	225	35.1	461	73.0	2,886	64.6

*Living with partner (married or unmarried)

**Housewife or houseman

varied for men between 0.3 (Germany) and 0.9 % (Portugal), and for women between 0.0 (Italy) and 2.0 % (Lithuania). Sexual AO varied for men between 0.0 (Germany) and 0.4 % (Sweden) and for women between 0.2 (Spain) and 1.5 % (Germany). Financial AO varied for men between 2.0 (Sweden) and 9.6 % (Portugal), and for women between 1.7 (Sweden) and 6.6 % (Portugal). Neglect varied for men between 0.0 (Italy) and 1.2 % (Spain), and for women between 1.4 (Spain) and 5.4 % (Portugal) (Table 2).

Bivariate analyses of characteristics and types of AO

In bivariate analysis, likelihood of psychological AO was higher for people living in Germany (OR 3.20, 95 % CI 2.38–4.31), Lithuania (OR 2.60, 95 % CI 1.83–3.70), Portugal (OR 1.91, 95 % CI 1.35–2.70) and Sweden (OR 3.70, 95 % CI 2.72–4.89), for the age groups born after 1934. Likelihood of AO was increased for those without house tenure (not owner OR 1.32, 95 % CI 1.07–1.63).

Likelihood of physical AO was higher among persons from Germany (OR 3.39, 95 % CI 1.44–9.96), Greece (OR 3.50, 95 % CI 1.50–8.17), Lithuania (OR 3.91, 95 % CI 1.71–8.94) and Sweden (OR 4.12, 95 % CI 1.80–9.46). Being widowed was related to decreased likelihood of physical AO (OR 0.26, 95 % CI 0.07–0.90).

Likelihood of sexual AO was higher for people, who lived alone (OR 7.52, 95 % CI 1.30–43.56) or were still working (OR 4.71, 95 % CI 1.47–15.06). However, the numbers were small and the 95 % CIs were wide.

Financial AO was increased among people from Portugal (OR 3.05, 95 % CI 1.7–5.27), among older persons (OR 2.26, 95 % CI 1.41–3.61), and among widowed/separated persons (widowed: OR 1.94, 95 % CI 1.37–2.74; separated: OR 2.21, 95 % CI 1.36–1.89). Likelihood of financial AO was lower for women (OR 0.47, 95 % CI 0.31–0.72) and higher for persons with university or similar degree (OR 1.86, 95 % CI 1.06–1.73) (Table 3).

Multivariate analyses of characteristics and overall AO and neglect

In multivariate analysis, likelihood of psychological AO was higher for people living in Germany (AOR 3.48, 95 % CI 2.45–4.93), Lithuania (AOR 2.60, 95 % CI 1.83–3.70), Porto, Portugal (AOR 1.91, 95 % CI 1.35–2.70) and Sweden (AOR 3.70, 95 % CI 2.61–5.23), and for the age groups born after 1934. The effect of educational level remained significant in multivariate analysis (primary school AOR 0.77, 95 % CI 0.62–0.97); not owner (AOR 1.29, 95 % CI 1.06–1.58). In multivariate analyses of overall AO, no financial strain was associated with decreased likelihood of overall AO (AOR 0.77, 95 % CI 0.64–0.93) and being from a

profession of low blue collar with increased AO (AOR 1.52, 95 % CI 1.10–2.10) (Table 4).

Discussion

In Europe, we identified psychological AO as the most prevalent type of AO in our study of older individuals in seven countries in Europe. Our prevalence estimates of psychological AO were high, compared to other studies which report much lower prevalence estimates, e.g. the recent study from Ireland (2.2 %) (Naughton et al. 2012) and from the UK (Biggs et al. 2009). However, almost the same prevalence rate of 27.5 % for abuse of women was found in a recent study for Sweden (Zinzow et al. 2009).

Domains (except country of residence) and AO

Factors of domain 1 (age, gender, migration history) were associated with types of AO. Interviewees aged 60–64, 65–69 and 70–79 years reported higher psychological AO. The youngest (aged 60–64) and the oldest (aged 80–84 years) reported more physical AO than those in the other age groups. Women in all age countries reported more sexual abuse and more neglect than men, which is in line with available studies on sexual AO (Cooper et al. 2008). Factors of domain 2 (education, occupational attainment) were positively associated with increased psychological AO. Factors of domain 3 (marital status, living situation) were negatively associated with psychological abuse, divorced/separated and being widow/er reported was positively associated with financial AO. Finally, interviewees who reported financial strain reported more AO than counterparts. The strongest association was found between country of residence and AO.

Country of residence and AO

AO was associated with being from Germany, Lithuania, and Sweden. There might be three explanations: the first explanation is related to possible differences in awareness between cultures. It is likely that differences between cities/countries partly reflect differences between cultures in threshold for awareness of AO. A second explanation might be that AO is distinct in each country because of collective life events, such as exposure to harsh parenting in childhood (Samelius et al. 2010; Zink et al. 2006; McHugh and Frieze 2006; Anderson 2005). These findings are on line with the studies from the USA suggesting major life events as major factors for experiencing AO (Acierno et al. 2010). Studies suggest that exposure to violence in childhood is associated with revictimization and exposure or perpetration of violence in adult life (Korbin et al. 1995;

Table 2 Prevalence of past 12 months AO (psychological, physical, physical with injuries, sexual, financial) and neglect by gender in seven cities from Europe in 2009 (n = 4,467)

Forms of AO	Stuttgart (Germany)		Athens (Greece)		Ancona (Italy)		Kaunas (Lithuania)		Porto (Portugal)		Granada (Spain)		Stockholm (Sweden)		Total	
	%	95 % CI	%	95 % CI	%	95 % CI	%	95 % CI	%	95 % CI	%	95 % CI	%	95 % CI	%	95 % CI
Psychological	27.1	23.7–30.7	13.2	10.7–16.0	10.4	8.1–13.0	24.4	21.3–28.1	21.9	18.8–25.3	11.5	9.1–14.2	29.7	26.2–33.5	19.4	18.2–20.6
Men	27.5	22.6–32.9	11.3	7.9–15.6	16.5	12.3–21.5	23.7	18.3–29.8	16.6	12.3–21.8	9.7	6.4–13.8	35.6	30.1–41.3	20.0	18.3–21.9
Women	26.8	22.1–31.8	14.7	11.2–18.8	6.9	4.5–10.1	25.1	20.9–29.6	25.4	21.2–29.9	12.8	9.5–16.6	24.9	20.4–29.9	18.9	17.4–20.5
Physical	3.3	2.1–5.0	3.4	2.1–5.1	1.0	0.4–2.1	3.8	2.4–5.6	2.1	1.1–3.5	1.4	0.6–2.6	4.0	2.6–5.8	2.7	2.2–3.2
Men	4.0	2.1–6.8	2.0	0.7–4.3	0.7	0.1–2.6	3.1	1.3–6.3	2.2	0.8–4.8	1.4	0.3–3.6	6.0	3.6–9.4	2.8	2.1–3.6
Women	2.8	1.3–5.1	4.6	2.7–7.3	1.2	0.3–2.9	4.1	2.4–6.6	2.0	0.9–3.9	1.4	0.5–3.2	2.3	1.0–4.5	2.6	2.0–3.3
Physical/injuries*	0.4	0.1–1.3	1.1	0.4–2.2	0.0	0.0–0.6	1.5	0.7–2.8	0.7	0.2–1.7	0.5	0.1–1.4	0.6	0.2–1.6	0.7	0.5–1.0
Men	0.3	0.0–1.7	0.3	0.0–1.9	0.0	0.0–1.4	0.7	0.1–2.8	0.0	0.0–1.4	0.9	0.1–2.8	0.7	0.1–2.4	0.4	0.2–0.8
Women	0.5	0.1–2.0	1.7	0.7–3.7	0.0	0.0–1.0	2.0	0.9–3.9	1.2	0.4–2.8	0.3	0.0–1.5	0.6	0.1–2.2	0.9	0.6–1.3
Sexual	0.9	0.3–1.9	1.5	0.7–2.8	0.5	0.1–1.4	0.3	0.0–1.1	1.3	0.6–2.5	0.3	0.0–1.1	0.5	0.1–1.4	0.7	0.5–1.0
Men	0.0	0.0–1.2	0.3	0.0–1.9	0.4	0.0–2.0	0.0	0.0–1.6	0.8	0.1–2.8	0.4	0.0–0.0	0.4	0.0–1.9	0.3	0.1–0.7
Women	1.5	0.5–3.4	2.5	1.2–4.7	0.6	0.1–2.0	0.4	0.0–1.7	1.6	0.6–3.3	0.2	0.0–1.5	0.6	0.1–2.2	1.0	0.7–1.5
Financial	3.6	2.5–5.4	4.0	2.6–5.8	2.7	1.6–4.3	2.8	1.7–4.4	7.8	5.8–10.1	4.8	3.3–6.8	1.8	0.9–3.2	3.8	3.3–4.4
Men	3.8	2.0–6.6	3.1	1.4–5.8	3.8	1.9–6.9	3.5	1.5–6.8	9.6	6.3–13.9	3.9	1.9–6.9	2.0	0.7–4.3	4.1	3.2–5.0
Women	3.5	1.8–6.0	4.8	2.8–7.5	2.0	0.8–4.1	2.4	1.2–4.5	6.6	4.3–9.5	5.5	3.4–8.3	1.7	0.6–3.7	3.7	3.0–4.5
Any	30.4	26.9–34.1	15.7	13.0–18.7	12.7	10.2–15.6	26.2	22.8–29.8	27.6	24.2–31.2	14.5	11.8–17.4	30.8	27.2–34.6	22.1	20.9–23.3
Men	30.2	25.1–35.7	12.6	9.0–17.0	18.8	14.4–23.9	25.9	20.3–32.2	24.6	19.4–30.3	12.5	8.8–17.0	36.9	31.4–42.7	22.8	20.9–24.8
Women	30.6	25.7–35.7	18.3	14.4–22.7	9.3	6.5–12.8	26.4	22.2–31.0	29.6	25.2–34.4	15.9	12.3–20.1	25.8	21.2–30.9	21.6	20.0–23.3
Neglect	1.8	0.9–3.1	2.8	1.7–4.4	1.0	0.4–2.1	0.6	0.1–1.5	3.7	2.4–5.5	0.9	0.3–2.0	1.3	0.5–2.1	1.6	1.3–2.1
Men	0.9	0.1–2.7	1.3	0.4–3.4	0.0	0.0–1.4	0.3	0.0–2.2	1.2	0.3–3.5	0.4	0.0–2.0	0.3	0.0–1.9	0.6	0.3–1.1
Women	2.4	1.1–4.7	4.0	2.2–6.6	1.5	0.5–3.4	0.7	0.1–2.1	5.4	3.4–8.0	1.4	0.4–3.2	2.0	0.8–4.2	2.3	1.8–3.0

*Physical violence (with injuries or without injuries)

Table 3 Bivariate analyses of characteristics of older persons living in the communities in 7 countries in Europe types of AO in 2009 ($n = 4,467$)

Factors	Abuse types																
	Psychological				Physical				Sexual				Financial				
	N	%	OR	95 % CI	p value	%	OR	95 % CI	p value	%	OR	95 % CI	p value	%	OR	95 % CI	p value
Country																	
Italy ^a	628	10.4	1.0	-	-	1.0	1.0	-	-	0.5	1.0	-	-	2.7	1.0	-	-
Germany	648	27.1	3.20	2.38-4.31	0.000	3.3	3.39	1.44-7.96	0.005	0.9	1.7	0.45-6.70	0.420	3.6	1.4	0.73-2.53	0.330
Greece	643	13	1.31	0.94-1.82	0.113	3.4	3.50	1.50-8.17	0.004	1.5	3.1	0.92-10.50	0.067	4.0	1.5	0.82-2.75	0.183
Lithuania	630	24.6	2.83	2.09-3.77	0.000	3.8	3.91	1.71-8.95	0.001	0.3	0.6	0.10-3.36	0.548	2.8	1.1	0.55-1.99	0.882
Portugal	656	21.9	2.42	1.77-3.31	0.000	2.1	2.09	0.82-5.33	0.121	1.4	2.6	0.72-9.26	0.143	7.8	3.0	1.77-5.27	0.000
Spain	636	11.5	1.12	0.80-1.56	0.521	1.4	1.40	0.53-3.69	0.493	0.3	0.58	0.10-3.30	0.541	4.8	1.83	1.04-3.22	0.037
Sweden	626	29.7	3.70	2.72-4.89	0.000	4.0	4.12	1.80-9.46	0.001	0.5	1.04	0.23-4.70	0.962	1.8	0.67	0.32-1.41	0.290
Age																	
60-64 ^a	1,124	22.1	1.00	-	-	3.0	1.0	-	-	0.7	1.00	-	-	2.9	1.00	-	-
65-70	1,088	19.6	0.86	0.70-1.06	0.156	2.1	0.69	0.41-1.18	0.177	0.9	1.29	0.51-3.24	0.586	2.8	0.96	0.59-1.58	0.880
71-74	961	21.8	0.99	0.80-1.22	0.899	2.6	0.83	0.49-1.41	0.498	0.7	1.02	0.37-2.84	0.964	4.5	1.56	0.99-2.47	0.057
75-80	749	14.6	0.60	0.38-0.71	0.000	2.4	0.77	0.43-1.37	0.370	0.6	0.89	0.29-2.74	0.834	4.0	1.39	0.85-2.28	0.191
81-84	545	15.2	0.63	0.49-0.82	0.000	3.2	1.07	0.61-1.88	0.818	0.5	0.66	0.17-2.59	0.550	6.4	2.26	1.41-3.61	0.001
Gender																	
Male ^a	1,908	20.0	1.00	-	-	2.8	1.00	-	0.3	1.00	-	0.011	4.1	4.1	1.00	-	-
Female	2,559	18.9	0.93	0.80-1.08	0.346	2.6	0.93	0.64-1.35	0.705	1.0	3.27	1.31-8.17	0.420	3.7	0.90	0.66-1.22	0.495
Migration history ^b																	
No	4,211			1.00	-	2.6	1.00	-	-	0.7	1.00	-	-	3.9	1.00	-	-
Yes	238			1.01-1.86	0.046	3.6	1.39	0.68-2.83	0.371	0.9	1.24	0.29-5.22	0.770	2.7	0.57	-	-
Education																	
Less than primary	661	14.8	0.67	0.53-0.86	0.001	2.9	1.07	0.63-1.82	0.801	0.6	1.07	0.35-3.26	0.908	5.6	1.74	1.15-2.65	0.009
Primary	1,097	17.3	0.81	0.67-0.99	0.038	2.2	0.81	0.50-1.33	1.071	1.0	1.70	0.73-3.95	0.217	3.3	0.99	0.65-1.51	0.952
Middle/high school ^a	1,798	20.5	1.00	-	-	2.7	1.00	-	-	0.6	1.00	-	-	3.3	-	-	-
University/similar	889	23.4	1.18	0.98-1.44	0.085	2.9	1.05	0.65-1.71	0.836	0.7	1.09	0.40-3.01	1.09	4.2	1.30	0.86-1.97	0.221
Occupational attainment																	
High white collar ^a	1,262	21.9	1.00	-	-	2.6	1.00	-	-	0.4	1.0	-	-	3.7	1.00	-	-
Low white collar	1,214	20.8	0.94	0.74-1.20	0.613	3.8	1.48	0.85-2.57	0.165	0.7	1.92	0.51-7.18	0.333	4.1	1.10	0.66-1.84	0.704
High blue collar	707	20.4	0.92	0.73-1.15	0.459	2.0	0.78	0.41-1.47	0.437	0.5	1.37	0.35-5.41	0.653	2.8	0.74	0.43-1.28	0.285
Low blue collar	570	18.2	0.80	0.65-0.97	0.024	1.9	0.73	0.43-1.26	0.260	0.7	1.89	0.62-5.77	0.266	3.5	0.94	0.61-1.43	0.759
Housewives	656	13.9	0.58	0.45-0.74	0.000	3.3	1.26	0.73-2.17	0.400	1.2	3.19	1.03-9.84	0.043	5.5	1.51	0.97-2.34	0.065
Marital status																	
Married ^c	2,903	19.7	1.00	-	-	2.7	1.00	-	-	0.6	1.00	-	-	3.0	1.0	-	-

Table 3 continued

Factors	Abuse types																	
	Psychological				Physical				Sexual				Financial					
	N	%	OR	95 % CI	p value	%	OR	95 % CI	p value	%	OR	95 % CI	p value	%	OR	95 % CI	p value	
Widowed	950	15.7	0.76	0.62–0.92	0.006	2.1	0.78	0.47–1.28	0.316	0.6	0.91	0.35–2.36	0.841	5.7	1.94	1.37–2.74	0.000	
Separated	343	25.2	1.37	1.05–1.78	0.019	4.1	1.56	0.87–2.81	0.135	1.3	2.16	0.77–6.10	0.145	6.4	2.21	1.36–3.59	0.001	
Not married	270	21.1	1.09	0.80–1.47	0.597	2.8	1.05	0.50–2.24	0.889	1.4	2.25	0.74–6.83	0.153	2.7	0.88	0.41–1.89	0.741	
Living situation																		
With partner ^a	2,208	20.4	1.00	–	–	2.5	1.00	–	–	0.5	1.00	–	–	3.2	1.00	–	–	
With partner and others	706	17.8	0.84	0.68–1.05	0.128	2.8	1.14	0.68–1.91	0.616	0.8	1.61	0.58–4.48	0.360	3.0	0.95	0.58–1.55	0.838	
With others	457	15.0	0.69	0.52–0.91	0.008	2.1	0.83	0.42–1.66	0.605	0.4	0.76	0.15–3.80	0.734	4.4	1.39	0.84–2.31	0.197	
Alone	1,078	20.2	0.99	0.82–1.18	0.882	2.9	1.19	0.76–1.86	0.444	1.3	2.70	1.21–6.01	0.015	5.5	1.78	1.25–2.53	0.002	
Ownership																		
Owner ^a	3,498	78.41	1.00	–	–	2.4	1.00	–	–	0.6	1.00	–	–	3.5	1.00	–	–	
Not-owner	963	21.59	1.48	1.24–1.76	0.000	3.4	1.41	0.93–2.14	0.107	1.2	2.07	1.00–4.31	0.052	5.1	1.49	1.06–2.10	0.023	
Income																		
Pensions ^a	2,939	67.55	1.00	–	–	2.4	1.00	–	–	0.5	1.00	–	–	3.4	1.00	–	–	
Wages	542	12.46	1.39	1.12–1.71	0.002	3.6	1.53	0.93–2.53	0.096	0.7	1.32	0.43–4.05	0.631	3.1	0.92	0.55–1.54	0.759	
Social/sick leave benefits	243	5.58	1.28	0.94–1.75	0.112	5.1	2.23	1.21–4.13	0.011	1.1	2.25	0.63–8.06	0.215	5.1	1.54	0.85–2.82	0.156	
By partner's income	627	14.41	0.64	0.50–0.81	0.000	2.4	1.03	0.59–1.78	0.928	1.6	3.12	1.41–6.91	0.005	5.7	1.74	1.18–2.55	0.005	
Other	110	14.41	0.90	0.53–1.51	0.682	1.4	0.60	0.11–3.16	0.544	0.0	0.00	–	0.989	3.3	0.98	0.32–2.98	0.976	
Financial strain																		
No ^a	1,605	35.97	1.00	–	–	2.4	1.00	–	–	0.5	1.00	–	–	3.1	1.00	–	–	
Yes	2,857	64.03	0.82	0.71–0.96	0.012	2.8	1.20	0.81–1.78	0.355	0.8	1.76	0.78–3.98	0.172	4.2	1.38	0.99–1.94	0.059	

^a Reference, ^b migration is defined as not born in the country, ^c married and/or living together with a partner

Table 4 the communities in seven cities in seven countries in Europe in 2009 ($n = 4,467$)

Variables	Total	%	OR	95 % CI	<i>p</i> value	AOR	95 % CI	<i>p</i> value
Country								
Italy	628	12.7	1.00	–	–	1.00	–	–
Germany	648	30.4	3.00	2.27–3.96	0.000	3.25	2.34–4.51	0.000
Greece	643	15.7	1.28	0.94–1.74	0.116	1.17	0.82–1.66	0.396
Lithuania	630	26.2	2.44	1.85–3.22	0.000	2.45	1.75–3.43	0.000
Portugal	656	27.6	2.62	1.97–3.49	0.000	2.28	1.66–3.15	0.000
Spain	636	14.5	1.16	0.86–1.57	0.331	1.32	0.89–1.94	0.163
Sweden	626	30.8	3.06	2.33–4.04	0.000	3.16	2.28–4.39	0.000
Age								
60–64	1,124	23.9	1.00	–	–	1.00	–	–
65–70	1,088	22.2	0.91	0.74–1.10	0.320	0.88	0.69–1.11	0.269
71–74	961	24.7	1.04	0.85–1.27	0.705	1.08	0.84–1.38	0.564
75–80	749	17.6	0.68	0.54–0.85	0.001	0.66	0.50–0.88	0.005
81–84	545	19.8	0.78	0.61–1.00	0.050	0.82	0.61–1.12	0.221
Gender								
Male	1,908	22.8	1.00	–	–	1.00	–	–
Female	2,559	21.6	0.93	0.81–1.08	0.341	0.95	0.79–1.14	0.553
Migration history								
No	4,211	21.9	1.00	–	–	1.00	–	–
Yes	238	27.2	1.34	0.99–1.80	0.055	0.97	0.69–1.35	0.848
Education								
Middle/high school	1,798	23.3	1.00	–	–	1.00	–	–
Less than primary school	661	17.7	0.71	0.56–0.89	0.003	0.75	0.54–1.04	0.083
Primary school	1,097	20.1	0.83	0.69–0.99	0.042	0.77	0.62–0.97	0.024
University/similar	889	25.9	1.15	0.95–1.38	0.145	1.15	0.89–1.49	0.273
Occupational attainment								
High white collar	1,262	23.9	1.00	–	–	1.00	–	–
Low blue collar	570	24.2	1.01	0.80–1.28	0.910	1.52	1.10–2.10	0.010
Blue collar	707	22.4	0.92	0.74–1.15	0.462	1.38	1.02–1.85	0.036
Low white collar	1,214	21.6	0.88	0.73–1.06	0.170	1.10	0.86–1.42	0.442
Housewives	656	17.1	0.66	0.52–0.83	0.001	1.47	0.98–2.20	0.059
Marital status								
Married	2,903	22.1	1.00	–	–	1.00	–	–
Widowed	950	19.3	0.84	0.70–1.01	0.069	0.70	0.40–1.20	0.191
Divorced/separated	343	28.7	1.42	1.11–1.83	0.006	0.88	0.50–1.54	0.654
Not married	270	24.2	1.12	0.84–1.50	0.431	0.69	0.38–1.24	0.213
Habitation								
Owner	3,498	20.6	1.00	–	–	1.00	–	–
Not-owner	963	28.1	1.51	1.28–1.78	0.000	1.29	1.06–1.58	0.013
Living situation								
With partner only	2,208	22.7	1.00	–	–	1.00	–	–
With partner and others	706	20.0	0.85	0.69–1.05	0.135	1.04	0.82–1.31	0.752
With others only	457	18.2	0.76	0.59–0.98	0.033	1.01	0.57–1.80	0.961
Alone	1,078	23.7	1.06	0.89–1.26	0.524	1.04	0.61–1.78	0.873
Income								
Work related pensions	2,939	21.8	1.00	–	–	1.00	–	–
Salaries	542	27.5	1.36	1.11–1.67	0.003	1.25	0.86–1.82	0.250
Sick leave benefits	243	28.0	1.40	1.04–1.87	0.025	1.23	0.87–1.72	0.240

Table 4 continued

Variables	Total	%	OR	95 % CI	<i>p</i> value	AOR	95 % CI	<i>p</i> value
Partner income	627	16.8	0.73	0.58–0.91	0.004	1.09	0.77–1.53	0.641
Other	110	19.8	0.89	0.54–1.46	0.640	0.86	0.49–1.50	0.591
Financial strain								
Yes	1,605	24.2	1.00	–	–	1.00	–	–
No	2,857	20.9	0.83	0.72–0.96	0.011	0.77	0.64–0.93	0.005

OR odds ratio, AOR adjusted odds ratio

Schwartz et al. 2006; Straus and Savage 2005). The relationship of childhood family violence with psychosocial problems of children (Samelius et al. 2010), dating partners (Zink et al. 2006) and intimate female to male partner violence (McHugh and Frieze 2006) has been suggested by many studies. Recent studies suggest that intimate-partner violence might increase during and after exposure to collective violence especially among men (Anderson 2005; Friedman et al. 2011; Vissing et al. 1991). This might be an explanation for the high rates in Germany and Lithuania. A third explanation might be that we predominantly found psychological AO in our sample and the associated domains are mainly associated with psychological violence and less with other types of AO. A fourth explanation might be that the associations depend on methodological reasons, e.g. in the instrument used which might be very sensitive in psychological AO.

Strengths and limitations

The study has several strengths. First, the large sample was recruited in seven cities from seven countries in Europe. Second, we used an internationally validated inventory. In addition, we provided interviewer training, and emphasis on ethical and safety considerations. Some limitations are important to consider. First, the cross-sectional design limits our ability to establish temporality of AO and domains. Second, we cannot identify real rates of victimization in our study. Third, the response rate varied. This could introduce measurement bias in the study; low response rates might lead to an underestimation of AO. Fourth, the interviewees were recruited from regional samples and may not be representative for the respective countries. Fifth, like in any other study based on self-reporting, there might be recall bias. Sixth, we excluded people with disabilities and those living in care institutions. In addition, the number of cases was very low for some types of AO which makes analyses difficult.

Conclusion

In spite of potential limitations, we can report for the first time ever comparable data on AO in seven countries of

Europe. Our findings suggest that prevalence rates of AO differ between countries. Herewith, our hypothesis that city of residence of the older individual is independently of the four domains assessed in this study associated with AO was confirmed. Preventing the prevalence of AO might depend on very early interventions to prevent revictimization.

Conflict of interest This study was funded and supported by the Executive Agency for Health and Consumers (EAHC) and participating institutions.

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