

Prevalence and 3-Year Incidence of Abuse Among Postmenopausal Women

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Abuse, including physical, sexual, financial, or psychological mistreatment, is a serious problem for adults aged 65 years and older.¹ According to the National Elder Abuse Incidence Study, approximately 450 000 older adults in domestic settings were abused, neglected, or both during 1996.² This number increases to approximately 551 000 when older adults who experienced self-neglect are included. In a population-based survey of metropolitan Boston, Pillemer and Finkelhor found a rate of elder abuse of 3.2%.³ In the long-term care setting, 23% of older adults either have been or still are victims of abuse.^{4–6}

The public health implications of abuse are its associations with premature mortality and morbidity.^{7–13} Lachs and colleagues found that among older adults who were victims of abuse, only 9% were alive 2 years later compared with 40% of older adults who had not been abused.¹¹ Other studies have found a risk of death for older abuse victims that is 3 times higher than for nonvictims.^{12,13} The direct medical costs associated with these violent injuries are estimated to add over \$5.3 billion to the nation's annual health expenditures (K. Fullin et al., unpublished data, 1994).

Gender is an important factor in abuse exposure. Worldwide, between 10% and 50% of women report being physically assaulted at some point in their adult lives; 14% to 25% of women seen at ambulatory medical clinics and 20% of women seen in emergency departments have been physically abused.^{7–10} Older, postmenopausal women (65 years or older) are more likely than older men to be the victims of all forms of abuse, except for abandonment, even when taking into account the fact that they make up a larger proportion of the aging population.^{3,4,14,15} While females made up about 57.6% of the total national population aged

Objectives. We examined prevalence, 3-year incidence, and predictors of physical and verbal abuse among postmenopausal women.

Methods. We used a cohort of 91 749 women aged 50 to 79 years from the Women's Health Initiative. Outcomes included self-reported physical abuse and verbal abuse.

Results. At baseline, 11.1% reported abuse sometime during the prior year, with 2.1% reporting physical abuse only, 89.1% reporting verbal abuse only, and 8.8% reporting both physical and verbal abuse. Baseline prevalence was associated with service occupations, having lower incomes, and living alone. At 3-year follow-up, 5.0% of women reported new abuse, with 2.8% reporting physical abuse only, 92.6% reporting verbal abuse only, and 4.7% reporting both physical and verbal abuse.

Conclusions. Postmenopausal women are exposed to abuse at similar rates to younger women; this abuse poses a serious threat to their health. (*Am J Public Health.* 2004; 94:605–612)

65 years and older in 2000, women were the victims in 76.3% of reports of emotional or psychological abuse, 71.4% of physical abuse, 63.0% of financial or material exploitation, and 60.0% of neglect.² Women in the early postmenopausal ages (aged 50–65 years) are exposed to abuse by intimate partners at a rate of 0.5 per 1000 and account for 30% of homicides committed by an intimate partner.¹⁶ Cognitive or physical impairment, or both, is an additional factor in abuse exposure. In a study of mortality due to mistreatment of elders, over 85% of victims of elder abuse had some impairment of their activities of daily living.^{2,11}

Unfortunately, most studies examining the associations with abuse exposure have focused on younger women in their childbearing years or on frail, functionally dependent older adults. To date, no study has examined the associations with physical and verbal abuse in functionally independent, cognitively intact, older women. We conducted this study to (1) describe the 1-year baseline prevalence and 3-year incidence of physical and verbal abuse in a cohort of functionally independent older women and (2) examine the sociodemographic factors and health behaviors associated with this prevalence and incidence of abuse.

METHODS

Subjects

We analyzed survey responses from 93 205 women enrolled in the observational study arm of the Women's Health Initiative (WHI). The study design of the WHI and its observational study arm has been described in detail previously.¹⁷ In brief, the WHI is a large, multicenter study with 2 components, an observation study and a clinical trial. Postmenopausal women, aged 50 to 79 years old at baseline, were recruited through targeted mass mailings to voter registration lists, vehicle registration lists, and driver's license lists and invited to participate in the clinical trial. Subjects who were eligible and interested enrolled in 1 or more of the 3 WHI clinical trials: (1) hormone replacement therapy to prevent cardiovascular disease, (2) a low-fat, high-fiber diet to prevent breast and colorectal cancer, and (3) calcium and vitamin D to prevent osteoporosis-related fractures.

Subjects who were ineligible or unwilling to participate in the clinical trials were invited to participate in the observational study, a longitudinal study of health outcomes. In general, women were ineligible for any clinical trial if they had a medical condition with a predicted survival of less

than 3 years, cancer within the last 10 years, or dementia rendering them unable to answer study questions. Women were excluded from the hormone replacement therapy clinical trial study if they were taking hormone replacement therapy and were unwilling to stop use. Women were ineligible for the low-fat diet clinical trial study if they had a baseline body mass index of less than 18 kg/m² or if they consumed more than 6000 kcal per day. Women were ineligible for the vitamin D/calcium clinical trial study if they had a history of an osteoporosis-related fracture or medical contraindications to taking study medication. All observational study participants completed several study questionnaires at the time of enrollment, including questions about abuse in the previous year. Three years after enrollment, participants were scheduled for a follow-up clinic visit and administered the same study questionnaires.

To determine the occurrence of physical abuse at baseline, the following question was asked: "Over the past year, were you physically abused by being hit, slapped, pushed, shoved, punched or threatened with a weapon by a family member or close friend?" Subjects could choose from the following responses: (1) no, (2) yes, and it upset me not too much, (3) yes, and it upset me moderately (medium), or (4) yes, and it upset me very much. We classified women who answered yes (responses 2–4) as having been exposed to physical abuse.

To determine the occurrence of verbal abuse at baseline, the following question was asked: "Over the past year, were you verbally abused by being made fun of, severely criticized, told you were a stupid or worthless person, or threatened with harm to yourself, your possessions, or your pets, by a family member or close friend?" Subjects could choose from the following responses: (1) no, (2) yes, and it upset me not too much, (3) yes, and it upset me moderately (medium), or (4) yes, and it upset me very much. We classified women who answered yes (responses 2–4) as having been exposed to verbal abuse. Women who fell into either the physical or verbal abuse categories at baseline determined the exposure group for our abuse prevalence estimates.

Using these questions, women were screened for physical and verbal abuse again 3 years after enrollment. Women who responded no at baseline but who answered yes 3 years after enrollment determined our 3-year incidence estimates of abuse. Any woman who screened positive for physical or verbal abuse at baseline or follow-up was given information about the Domestic Violence Hotline, self-help information about domestic violence, and information about the nearest battered women's shelter. They were also urged to seek help from adult protective services and receive psychological counseling for domestic violence.

Responses to these abuse questions determined 3 mutually exclusive variables: physical abuse only, verbal abuse only, and physical and verbal abuse. These 3 variables became our main outcomes of interest. Our baseline predictor variables included age, race/ethnicity, occupation, marital status, income, education, smoking, alcohol intake, and living arrangement. These predictor variables were chosen on the basis of previous literature suggesting an association of sociodemographics (age, race/ethnicity, education, occupation, and income) and health behaviors (smoking and alcohol use) with elder abuse and intimate partner violence.^{18–20}

Data Analysis

We first examined the descriptive statistics of the predictor variables and the abuse variables (at baseline and year 3): no abuse, physical abuse only, verbal abuse only, and combined physical and verbal abuse. Chi-square tests were then performed to examine the bivariate association of the various variables with reports of physical, verbal, and combined physical and verbal abuse vs no abuse. The bivariate analyses examined the association of each variable without adjusting for other factors.

We considered abuse to be the outcome variable and our sociodemographic and health behavior variables to be covariates. Two sets of multivariate regression models were developed for both baseline abuse prevalence data and 3-year abuse incidence data. Complete case analysis was used for all modeling and all explanatory variables were kept in each model, regardless of statistical signifi-

cance. Thus, estimates of odds ratios for each predictor variable were adjusted for all other variables in the model. Continuous variables were included as linear covariates and categorical variables as indicator levels. Logistic regression models were developed to examine the association of study covariates with each level of abuse status versus no abuse (i.e., a separate model for each level of abuse vs no abuse). All analyses were performed with the *SAS System, Version 8* (SAS Institute Inc, Cary, NC).

RESULTS

Of the 91 749 subjects responding to survey questions on abuse at baseline, 10 199 (11.1%) reported exposure to abuse within the preceding 12 months. Most women in our sample were non-Hispanic White (82.9%), well educated (40.3% had at least a college degree), and married (64.9%) (Table 1). While most women in our sample were not currently employed, those who were employed tended to work in managerial or professional occupations. Of those women who were married, most reported that their spouse was not currently employed. Most women reported drinking less than 1 alcoholic beverage per week and were not currently smokers.

Of the 10 199 women exposed to abuse, 218 women (2.1%) were exposed to physical abuse only, 9083 (89.1%) to verbal abuse only, and 898 (8.8%) to physical and verbal abuse sometime during the year before the baseline interview. Exposure to abuse was associated with being in the younger age cohort (<58 years), being of non-White race/ethnicity, having less than a high school education, having a family income of less than \$20 000, being divorced or separated, being a past or current smoker, and drinking more than 1 drink per week (all *P* values < .01) (Table 1).

The associations with exposure to physical abuse at baseline only, after control for other covariates, are shown in Table 2. Black women were 2.84 times more likely (95% confidence interval [CI]=1.89, 4.26) to report exposure to physical abuse only at baseline than non-Hispanic White women. Other ethnic minority subgroups were also

TABLE 1—Baseline Abuse Prevalence in Cohort of Postmenopausal Women, by Subjects' Characteristics (N = 91 749)

Characteristic	No Abuse, No. (%) (n = 81 550)	Any Abuse (n = 10 199)					
		Physical Abuse Only, No. (%)	P	Verbal Abuse Only, No. (%)	P	Physical and Verbal Abuse, No. (%)	P
Overall		218 (2.1)		9 083 (89.1)		898 (8.8)	
Age, y			.19		<.001		<.001
<58	22 136 (27.1)	73 (33.5)		3 229 (35.5)		384 (42.8)	
59–64	20 620 (25.3)	57 (26.1)		2 408 (26.5)		210 (23.4)	
65–69	18 367 (22.5)	43 (19.7)		1 821 (20.0)		162 (18.0)	
70–74	14 052 (17.2)	29 (13.3)		1 122 (12.4)		102 (11.4)	
>74	6 375 (7.8)	16 (7.3)		503 (5.5)		40 (4.5)	
Ethnicity			<.001		<.001		<.001
American Indian/Alaska Native	339 (0.4)	4 (1.8)		56 (0.6)		14 (1.6)	
Asian/Pacific Islander	2 393 (2.9)	8 (3.7)		219 (2.4)		35 (3.9)	
African American	6 682 (8.2)	55 (25.2)		639 (7.0)		137 (15.3)	
Hispanic/Latino	2 950 (3.6)	19 (8.7)		458 (5.0)		103 (11.5)	
White	69 186 (84.8)	132 (60.6)		7 711 (84.9)		609 (67.8)	
Education			<.001		<.001		<.001
0–8 y	1 284 (1.6)	13 (6.0)		150 (1.7)		47 (5.3)	
Some HS/HS diploma/GED	16 141 (20.0)	62 (28.8)		1 541 (17.1)		193 (21.7)	
School after high school	29 242 (36.1)	77 (35.8)		3 527 (39.2)		381 (42.9)	
College graduate or higher	34 232 (42.3)	63 (29.3)		3 784 (42.0)		267 (30.1)	
Family income, \$			<.001		<.001		<.001
<20 000	11 730 (15.5)	65 (33.0)		1 496 (17.8)		283 (34.5)	
20 000–34 999	17 567 (23.2)	39 (19.8)		2 002 (23.8)		204 (24.9)	
35 000–49 999	15 287 (20.2)	40 (20.3)		1 676 (19.9)		118 (14.4)	
50 000–74 999	15 378 (20.3)	29 (14.7)		1 653 (19.7)		114 (13.9)	
>75 000	15 655 (20.7)	24 (12.2)		1 580 (18.8)		101 (12.3)	
Occupation			<.001		<.001		<.001
Managerial/professional	33 991 (43.7)	66 (33.0)		3 655 (42.4)		260 (31.1)	
Technical/sales/administrative	22 155 (28.5)	48 (24.0)		2 526 (29.3)		254 (30.4)	
Service/labor	13 151 (16.9)	65 (32.5)		1 596 (18.5)		221 (26.4)	
Homemaker only	8 489 (10.9)	21 (10.5)		852 (9.9)		101 (12.1)	
Currently employed (yes)	28 018 (35.4)	69 (32.9)	.44	3 340 (38.1)	<.001	330 (38.5)	.06
Marital status			<.001		<.001		<.001
Never married	3 940 (4.9)	8 (3.7)		335 (3.7)		12 (1.3)	
Divorced/separated	12 379 (15.3)	59 (27.4)		1 665 (18.4)		279 (31.2)	
Widowed	14 717 (18.1)	38 (17.7)		999 (11.1)		127 (14.2)	
Presently married	50 133 (61.8)	110 (51.2)		6 032 (66.8)		475 (53.2)	
Partner's main job			<.001		<.001		<.001
Homemaker	152 (0.3)	2 (1.9)		22 (0.4)		4 (0.9)	
Managerial/professional	26 926 (56.3)	37 (35.2)		2 986 (51.9)		168 (37.5)	
Technical/sales/administrative	6 697 (14.0)	15 (14.3)		815 (14.2)		67 (15.0)	
Service/labor	8 371 (17.5)	33 (31.4)		1 219 (21.2)		140 (31.3)	
Other	5 715 (11.9)	18 (17.1)		716 (12.4)		69 (15.4)	
Partner currently employed (yes)	18 446 (38.0)	36 (34.6)	.003	2 228 (38.4)	<.001	186 (41.1)	<.001
Smoking			.09		<.001		<.001
Never smoked	41 115 (51.0)	100 (46.3)		4 410 (49.3)		420 (47.7)	
Past smoker	34 568 (42.9)	96 (44.4)		3 844 (43.0)		354 (40.2)	
Current smoker	4 865 (6.0)	20 (9.3)		694 (7.8)		107 (12.1)	

Continued

TABLE 1—Continued

Alcohol intake			<.001		<.001		<.001
Nondrinker	9 139 (11.3)	24 (11.3)		881 (9.8)		138 (15.5)	
Past drinker	14 879 (18.3)	65 (30.5)		1 975 (21.9)		242 (27.2)	
< 1 drink/wk	25 516 (31.5)	56 (26.3)		3 034 (33.6)		266 (29.9)	
1–6 drinks/wk	21 122 (26.0)	43 (20.2)		2 145 (23.7)		156 (17.5)	
≥ 7 drinks/wk	10 430 (12.9)	25 (11.7)		999 (11.1)		89 (10.0)	
Living alone (yes)	21 940 (27.1)	52 (24.0)	.31	1 884 (20.9)	<.001	233 (26.2)	.56

Note. HS=high school; GED=general equivalency diploma.

TABLE 2—Multivariate Associations With Baseline Reports of Abuse vs No Abuse Among Postmenopausal Women

	Physical Abuse Only OR (95% CI)	Verbal Abuse Only OR (95% CI)	Physical and Verbal Abuse OR (95% CI)
Age, y (vs 50–58 y)			
59–64	0.81 (0.55, 1.19)	0.79 (0.75, 0.84)	0.56 (0.47, 0.68)
65–69	0.76 (0.49, 1.17)	0.68 (0.64, 0.73)	0.49 (0.39, 0.60)
70–79	0.67 (0.42, 1.06)	0.57 (0.53, 0.62)	0.38 (0.30, 0.48)
Race (vs non-Hispanic White)			
American Indian/Alaska Native	2.54 (0.62, 10.45)	1.34 (0.98, 1.83)	3.10 (1.73, 5.54)
Asian/Pacific Islander	2.04 (0.98, 4.24)	0.79 (0.68, 0.92)	1.52 (1.04, 2.24)
African American	2.84 (1.89, 4.26)	0.73 (0.66, 0.80)	1.26 (0.99, 1.59)
Hispanic American	1.74 (0.93, 3.26)	1.08 (0.96, 1.22)	1.95 (1.49, 2.54)
Education (vs college graduate)			
≤ HS diploma	1.45 (0.90, 2.33)	0.70 (0.65, 0.76)	0.82 (0.64, 1.04)
Some college/technical school	1.10 (0.72, 1.66)	0.98 (0.93, 1.05)	1.14 (0.94, 1.38)
Income, \$ (vs > \$75 000)			
< 20 000	2.72 (1.43, 5.18)	2.12 (1.86, 2.42)	5.15 (3.75, 7.06)
20 000–34 999	1.64 (0.93, 2.89)	1.72 (1.56, 1.88)	3.14 (2.40, 4.11)
35 000–49 999	1.18 (0.73, 1.90)	1.43 (1.33, 1.53)	1.94 (1.54, 2.44)
50 000–75 000	1.42 (0.91, 2.22)	1.22 (1.14, 1.30)	1.29 (1.01, 1.64)
Employment (vs managerial)			
Technical	0.95 (0.61, 1.49)	1.03 (0.97, 1.10)	1.16 (0.94, 1.43)
Service	1.68 (1.08, 2.62)	1.08 (1.00, 1.17)	1.40 (1.12, 1.75)
Homemaker	1.03 (0.57, 1.86)	0.96 (0.87, 1.05)	1.04 (0.78, 1.40)
Marital status (vs married)			
Never married	0.83 (0.35, 1.99)	0.71 (0.62, 0.82)	0.28 (0.15, 0.52)
Divorced	1.55 (0.97, 2.49)	1.05 (0.96, 1.14)	1.42 (1.13, 1.79)
Widowed	1.06 (0.63, 1.78)	0.64 (0.58, 0.71)	0.75 (0.57, 0.99)
Smoking status (vs never smoked)			
Past smoker	1.34 (0.97, 1.84)	1.06 (1.01, 1.12)	1.07 (0.91, 1.26)
Current smoker	1.30 (0.74, 2.26)	1.30 (1.18, 1.43)	1.69 (1.33, 2.16)
Alcohol use (vs past/never drank)			
< 1 drink/wk	0.79 (0.54, 1.17)	0.97 (0.92, 1.03)	0.86 (0.72, 1.03)
≥ 1 drink/wk	1.02 (0.70, 1.50)	0.80 (0.76, 0.86)	0.73 (0.60, 0.89)
Living alone (vs no)	0.61 (0.39, 0.95)	0.75 (0.69, 0.81)	0.76 (0.61, 0.95)

Note. OR=odds ratio; CI=confidence interval; HS=high school.

more likely to report physical abuse exposure than non-Hispanic White women, although these associations did not reach statistical significance. When other variables are controlled for, women who had incomes of less than \$20 000 (odds ratio [OR]=2.72; 95% CI=1.43, 5.18) and who worked in service-type occupations (OR=1.68; 95% CI=1.08, 2.62) were more likely to report exposure to physical abuse at baseline. Women who were living alone were nearly half as likely to report exposure to physical abuse at baseline.

Table 2 also demonstrates the multivariate associations with exposure to verbal abuse only at baseline. When other variables are controlled, women in the 3 older age categories were less likely than women aged 50 to 58 years to report verbal abuse only at baseline. Black and Asian/Pacific Islander women were less likely to report verbal abuse only at baseline than non-Hispanic White women (OR=0.73 and 0.79, respectively), as were women who were never married/widowed, drank less than 1 drink per week, or who lived alone. Women who had incomes of less than \$75 000 annually or who were current smokers were more likely to report verbal abuse only.

For women reporting both physical and verbal abuse, those in the older age categories were less likely to report abuse at baseline than women aged 50 to 58 years, as were women who were never married, were widowed, or lived alone. Ethnic minority women, those with incomes of less than \$75 000, those employed in service-type jobs, and those who were current smokers were more likely to report both physical and verbal abuse.

Of the 48 522 women with follow-up data at year 3 and who reported no exposure to domestic violence at baseline, 2431 women (5.01%) reported exposure to abuse at their follow-up visit 3 years later. Of these 2431 women, 67 (2.8%) reported physical abuse only, 2250 (92.6%) verbal abuse only, and 114 (4.7%) both physical and verbal abuse (Table 3). Ethnicity was associated with all 3 abuse categories, while education and income were associated with both physical abuse only and verbal abuse only. Age and marital status were associated with verbal abuse only and the combined abuse category.

The associations with 3-year incident exposure to physical and verbal abuse, after control for other covariates, are demonstrated in Table 4. Women in the 2 older age categories were less likely to have been exposed to either physical or verbal abuse at the 3-year follow-up visit than women aged 50 to 58 years. Non-White women were more likely to report exposure to either physical or verbal abuse at the 3-year follow-up visit than non-Hispanic White women, as were women who had lower annual household incomes (i.e., incomes of less than \$75 000 annually). Women who were past or current smokers were more likely to report 3-year incident exposure to verbal abuse only. Women who were living alone were less likely to report incident exposure to verbal abuse only.

DISCUSSION

In this study, we found that many functionally independent, older women are exposed to physical and verbal abuse. Our finding that 1.2% of the women in our self-selected, postmenopausal cohort were physically abused is similar to the prevalence estimates reported in other population-based surveys.^{21–23} However, our finding that 10% of women reported verbal abuse is 3 to 10 times higher than population-based results showing a 1.1% to 3.2% prevalence of verbal abuse.^{21–24} These findings suggest that even for nondependent older women, physical and verbal abuse is occurring at rates similar to, or higher than, those for younger women. Perhaps more importantly, we found that 3.7 per 1000 older women reported new exposure to physical abuse and 46 per 1000 older

women reported becoming new victims of verbal abuse. This result compares with population estimates that show the annual incidence of abuse ranging from 735 000 to 2 million out of an estimated 31 million older women.²⁴ To our knowledge, our findings are the first estimate of incidence of physical and verbal abuse in a large sample of postmenopausal women.

Exposure to abuse among these postmenopausal women is associated with younger age and lower income. These findings are comparable to data in intimate partner abuse research but contrast with elder abuse data. Studies demonstrate that victims of intimate partner abuse are more likely to be younger than 35 years old, not to be college educated, and to have lower socioeconomic status.^{11,18,19,25–28} Studies on abuse among older adults, however, show that advanced age (>75 years old), functional dependency, shared living arrangement, social isolation, depression, personality disorder, cognitive impairment, and excessive use of drugs or alcohol place an older adult at risk for abuse.^{20,28}

The discrepancies between our findings and previous research with regard to age and living situation may be related to the fact that all the women in our sample were functionally independent. Given the high level of physical functioning in our sample, it is unlikely that abuse by caregivers, neglect, or self-neglect was a predominate cause of abuse in our study. By focusing on the frail elderly, most of the previous research on the abuse of older adults was influenced by issues of caregiver abuse and neglect. These findings suggest that there is a transition in abuse risk factors for women as they age. If a woman remains functionally independent, the risk factors for abuse mirror those for intimate partner violence. If she becomes dependent functionally, and perhaps more vulnerable, the risk factors for abuse mirror those of caregiver abuse and neglect.

One interesting finding was the relationship between race/ethnicity and abuse. Non-Hispanic White women reported more exposure to verbal abuse than their minority counterparts, while African American women reported more exposure to physical abuse. Our 3-year incidence results show a similar

pattern for African American women, with less verbal abuse in this group, although the results did not reach statistical significance. The 3-year incidence results, however, show a stronger association of all 3 types of abuse exposure among Hispanic women.

These results are in contrast to the findings on elder abuse and abuse in younger women that show non-Whites as being more likely to be victimized by all types of abuse. Previous research demonstrates a 4-fold influence of ethnicity on reports of abuse.¹⁹ There has not been any distinction demonstrated in the types of abuse experienced across racial subgroups. Since intimate relationships have strong culturally specific meanings, the interpretation of what constitutes abuse across cultures may influence the association of racial/ethnic group with certain types of abuse. Perhaps race/ethnicity is a factor for abuse exposure that has more specific targets in older, functionally independent women as contrasted with more broad categories of race/ethnicity in more frail older women. Thus, despite their older age, functionally independent victims of abuse in our study seem to be similar to younger victims of intimate partner violence.

In addition to race/ethnicity, other lifestyle factors are associated with abuse exposure. Current smoking seems to be associated with greater exposure to abuse, particularly for verbal abuse. However, alcohol use seems to be less likely among those who were exposed to abuse, particularly verbal abuse. The associations with verbal abuse are consistent for both our prevalence and 3-year incidence results. While previous research has not examined smoking behaviors in women exposed to violence, our findings regarding alcohol use are in contrast with most previous research. Research on intimate partner violence and elder abuse suggests that abuse victims in both groups have a higher rate of alcohol and substance use.^{20,29} Our results may reflect the fact that the functionally independent older women in our study did not perceive a need to “escape” an abusive relationship through alcohol use. Another possibility may be that these women perceived alcohol use as increasing their vulnerability and thus escalating their potential of being victimized by greater violence.

TABLE 3—Three-Year Abuse Incidence in Cohort of Postmenopausal Women, by Subjects' Characteristics (N = 48 522)

Characteristic	No Abuse (n = 46 091)	Any Abuse (n = 2 431)					
		Physical Abuse Only, No. (%)	P	Verbal Abuse Only, No. (%)	P	Physical and Verbal Abuse, No. (%)	P
Overall		67 (2.8)		2 250 (92.6)		114 (4.7)	
Age, y			.12		<.001		<.001
<58	14 272 (31)	27 (40.3)		940 (41.8)		53 (46.5)	
59–64	10 903 (23.7)	20 (29.9)		533 (23.7)		32 (28.1)	
65–69	9 860 (21.4)	8 (11.9)		420 (18.7)		14 (12.3)	
70–74	7 700 (16.7)	7 (10.4)		260 (11.6)		10 (8.8)	
>74	3 356 (7.3)	5 (7.5)		97 (4.3)		5 (4.4)	
Ethnicity			<.001		<.001		<.001
American Indian/Alaska Native	156 (0.3)	0 (0.0)		8 (0.4)		2 (1.8)	
Asian/Pacific Islander	1 320 (2.9)	4 (6.0)		81 (3.6)		2 (1.8)	
African American	2 831 (6.1)	11 (16.4)		139 (6.2)		14 (12.3)	
Hispanic/Latino	1 119 (2.4)	8 (11.9)		109 (4.8)		14 (12.3)	
White	40 665 (88.2)	44 (65.7)		1 913 (85)		82 (71.9)	
Education			.04		<.001		.31
0–8 y	509 (1.1)	3 (4.5)		28 (1.3)		2 (1.8)	
Some HS/HS diploma/GED	8 611 (18.8)	14 (21.2)		369 (16.6)		23 (20.7)	
School after high school	16 228 (35.5)	25 (37.9)		879 (39.4)		46 (41.4)	
College graduate or higher	20 405 (44.6)	24 (36.4)		953 (42.8)		40 (36.0)	
Family income, \$.01		.007		.06
<20 000	6 073 (14.1)	18 (29.5)		356 (16.9)		22 (20.6)	
20 000–34 999	9 989 (23.2)	12 (19.7)		469 (22.3)		32 (29.9)	
35 000–49 999	8 770 (20.4)	12 (19.7)		432 (20.5)		17 (15.9)	
50 000–74 999	8 949 (20.8)	10 (16.4)		410 (19.5)		21 (19.6)	
≥75 000	9 264 (21.5)	9 (14.8)		436 (20.7)		15 (14.0)	
Occupation			.08		.06		.36
Managerial/professional	19 732 (45.1)	20 (31.7)		967 (45.7)		45 (41.7)	
Technical/sales/administrative	12 425 (28.4)	18 (28.6)		579 (27.4)		35 (32.4)	
Service/labor	7 028 (16.1)	16 (25.4)		375 (17.7)		21 (19.4)	
Homemaker only	4 550 (10.4)	9 (14.3)		193 (9.1)		7 (6.5)	
Currently employed (yes)	16 675 (37.6)	19 (29.2)		929 (43.6)		46 (41.1)	.45
Marital status			.51		<.001		.02
Never married	2 220 (4.8)	4 (6.0)		99 (4.4)		4 (3.6)	
Divorced/separated	6 804 (14.8)	14 (20.9)		417 (18.6)		27 (24.1)	
Widowed	7 750 (16.9)	11 (16.4)		267 (11.9)		12 (10.7)	
Presently married	29 155 (63.5)	38 (56.7)		1 457 (65.0)		69 (61.6)	
Partner's main job			<.001		<.001		.08
Homemaker	67 (0.2)	1 (2.9)		5 (0.4)		0 (0.0)	
Managerial/professional	16 261 (58)	12 (34.3)		733 (52.8)		25 (39.1)	
Technical/sales/administrative	3 934 (14.0)	4 (11.4)		200 (14.4)		12 (18.8)	
Service/labor	4 540 (16.2)	13 (37.1)		279 (20.1)		16 (25.0)	
Other	3 232 (11.5)	5 (14.3)		171 (12.3)		11 (17.2)	
Partner currently employed (yes)	11 242 (40.2)	16 (43.2)	.052	604 (43.6)	.02	37 (53.6)	.08
Smoking			.97		.003		.14
Never smoked	23 332 (51.2)	35 (52.2)		1 070 (48.2)		56 (50.5)	
Past smoker	19 710 (43.2)	28 (41.8)		995 (44.8)		44 (39.6)	
Current smoker	2 556 (5.6)	4 (6.0)		155 (7.0)		11 (9.9)	

Continued

TABLE 3—Continued

Alcohol intake			.11		.04		<.001
Nondrinker	4 698 (10.2)	9 (13.4)		226 (10.1)		17 (15.2)	
Past drinker	7 849 (17.1)	17 (25.4)		431 (19.2)		35 (31.3)	
< 1 drink/wk	14 511 (31.6)	21 (31.3)		717 (32.0)		29 (25.9)	
1–6 drinks/wk	12 525 (27.3)	17 (25.4)		597 (26.6)		18 (16.1)	
≥ 7 drinks/wk	6 291 (13.7)	3 (4.5)		271 (12.1)		13 (11.6)	
Living alone (yes)	12 087 (26.3)	17 (25.4)	.86	520 (23.3)	<.001	26 (23.2)	.45

Note. HS=high school; GED=general equivalency diploma.

TABLE 4—Multivariate Associations With 3-Year Incidence of Abuse vs No Abuse Among Postmenopausal Women

	Physical Abuse Only OR (95% CI)	Verbal Abuse Only OR (95% CI)	Physical and Verbal Abuse OR (95% CI)
Age, y (vs 50–58 y)			
59–64	1.17 (0.62, 2.19)	0.75 (0.67, 0.85)	0.67 (0.41, 1.10)
65–69	0.44 (0.18, 1.06)	0.61 (0.53, 0.70)	0.33 (0.17, 0.64)
70–79	0.46 (0.20, 1.09)	0.50 (0.43, 0.57)	0.33 (0.17, 0.64)
Race (vs non-Hispanic White)			
American Indian	...	1.03 (0.48, 2.21)	5.40 (1.29, 22.65)
Asian/Pacific Islander	2.11 (0.63, 7.00)	1.45 (1.14, 1.84)	0.70 (0.17, 2.91)
African American	1.66 (0.66, 4.13)	0.87 (0.71, 1.06)	1.39 (0.71, 2.73)
Hispanic American	4.50 (1.90, 10.66)	1.65 (1.31, 2.08)	3.56 (1.77, 7.15)
Education (vs college graduate)			
≤ HS diploma	0.52 (0.22, 1.22)	0.87 (0.75, 1.02)	1.21 (0.64, 2.30)
Some college/technical school	0.86 (0.44, 1.67)	1.13 (1.01, 1.27)	1.13 (0.67, 1.90)
Income, \$ (vs > \$75 000)			
< 20 000	2.18 (0.58, 8.18)	2.05 (1.57, 2.66)	1.37 (0.42, 4.52)
20 000–34 999	2.74 (1.08, 6.95)	1.65 (1.38, 1.98)	2.46 (1.18, 5.15)
35 000–49 999	1.24 (0.53, 2.89)	1.34 (1.17, 1.54)	2.02 (1.12, 3.62)
50 000–75 000	1.48 (0.69, 3.19)	1.25 (1.10, 1.42)	1.11 (0.59, 2.09)
Employment (vs managerial)			
Technical	1.47 (0.68, 3.14)	0.89 (0.78, 1.00)	0.90 (0.53, 1.52)
Service	2.18 (1.00, 4.77)	0.95 (0.82, 1.10)	0.67 (0.35, 1.28)
Homemaker	2.23 (0.88, 5.63)	0.90 (0.75, 1.08)	0.47 (0.19, 1.20)
Marital status (vs married)			
Never married	0.87 (0.19, 4.05)	0.85 (0.66, 1.10)	0.63 (0.18, 2.19)
Divorced	1.34 (0.56, 3.25)	1.09 (0.92, 1.29)	1.39 (0.73, 2.65)
Widowed	1.45 (0.58, 3.62)	0.79 (0.65, 0.96)	1.08 (0.51, 2.26)
Smoking status (vs never smoked)			
Past smoker	0.88 (0.50, 1.54)	1.16 (1.05, 1.28)	0.98 (0.64, 1.51)
Current smoker	0.72 (0.22, 2.39)	1.22 (1.01, 1.48)	1.58 (0.78, 3.17)
Alcohol use (vs past/never drank)			
< 1 drink/wk	0.84 (0.43, 1.63)	0.96 (0.85, 1.08)	0.55 (0.34, 0.90)
≥ 1 drink/wk	0.85 (0.43, 1.68)	0.90 (0.79, 1.01)	0.50 (0.30, 0.83)
Living alone (vs no)	0.76 (0.34, 1.72)	0.83 (0.70, 0.97)	0.73 (0.39, 1.36)

Note. HS=high school.

This study has important limitations. The detection of exposure to physical and verbal abuse relies on the self-report of the victims. Subjects may have been reluctant to admit to abuse, resulting in an underestimate of the prevalence and 3-year incidence. This underestimate may also diminish the differences found in the association of abuse with our predictor variables. Also, the subjects recruited for the WHI are drawn from a volunteer sample of older healthier women. These women may differ from other women of their age in exposure to abuse and its effects on their health status.

Despite these limitations, our finding that 11.1% of women aged 50 to 79 years reported exposure to abuse in the past year, and that an additional 5% in this age group reported exposure to abuse over a 3-year interval, reveals an important problem for older women. While it is unclear if this abuse is a continuation of a lifelong cycle of violence or the result of late-life onset of violence, these results suggest that abuse is occurring at rates too great to ignore. If abuse of older women yields the same untoward morbidity and mortality seen in younger women and fragile elders, there is a great threat to public health. Although a recent article by Ramsay et al. challenges the effectiveness of screening for domestic violence,³⁰ screening these postmenopausal women may trigger an investigation by agencies like Adult Protective Services that can provide help to abuse victims. Our results suggest that additional investigations regarding the impact of abuse in this population and the impact of screening for abuse in postmenopausal women should be encouraged. ■

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Contributors

C.P. Mouton conceived of the study, developed the study design, and supervised the data acquisition and analysis, and drafting of the manuscript. R.J. Rodabough retrieved study data and completed data analysis. S.L.D. Rovi assisted in the study design. S.K. Burge assisted in defining the categories of abuse. All authors assisted in the interpretation of the data analysis and drafting of the manuscript.

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Human Participants Protection

Protocol and consent forms were approved by the institutional review boards of all the Women's Health Initiative participating institutions, including the University of Texas Health Science Center at San Antonio. All women provided written informed consent.

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