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Do the Definitions of Elder Mistreatment Subtypes Matter? Findings From the PINE Study

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Background. Elder mistreatment (EM) is a pervasive public health issue and is associated with morbidity and premature mortality. This study aimed to examine how the prevalence of EM and its subtypes vary using different definitions among U.S. Chinese older adults.

Methods. The Population Study of Chinese Elderly in Chicago is a population-based epidemiological survey of 3,159 U.S. Chinese older adults in the Greater Chicago area that is guided by a community-based participatory research approach. Participants answered questions regarding psychological, physical, and sexual abuse, caregiver neglect, and financial exploitation. Definitional approaches for EM and its subtypes were constructed from least restrictive to most restrictive.

Results. Using different definitional criteria, the prevalence of psychological abuse was 1.1%–9.8%, physical abuse was 1.1%, sexual abuse was 0.2%, caregiver neglect was 4.6%–11.1%, and financial exploitation was 8.8%–9.3%. Overall, EM varied from 13.9% to 25.8%, depending on the defining criteria. Regardless of the definition used, those who experienced EM were more likely to be older and have higher educational attainment, poor health status, poor quality of life, and worsened health change in the last year. However, among the different definitions of overall EM, there were no statistically significant differences across sociodemographic characteristics or self-reported health status associated with EM criteria.

Conclusions. Elder mistreatment is prevalent among U.S. Chinese older adults regardless of the definitional criteria. Sociodemographic characteristics associated with EM did not differ by definitional criteria. Future longitudinal studies are needed to quantify the risk and protective factors associated with EM in Chinese aging populations.

Key Words: Elder mistreatment subtypes—Chinese older adults—Prevalence—Population-based study.

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ELDER mistreatment (EM) is a significant public health and human rights issue. According to the U.S. National Elder Mistreatment Study, the 1-year prevalence of EM is 11.4% (1). EM has been associated with adverse health outcomes with respect to morbidity and mortality (2), as well as increased health services utilization (3,4). In view of its public health significance, for the first time, the U.S. Preventive Services Task Force in October 2013 recommended EM as a priority research topic in its report to Congress (5). Nevertheless, we still have rudimentary knowledge on the issue of EM in minority populations.

Over the last 20 years, there has been lack of consensus in the field regarding the definitions of EM used for determining prevalence estimates. Although many studies have used an "any positive EM item" approach, other studies have more systematically considered the heterogeneity of the definitions and have been stricter in the categorization of EM cases (6,7). In addition, attempts to draw conclusions about prevalence estimates for EM across studies are very challenging. There has been no epidemiological study that has comprehensively examined the differential definitions of EM within the same study to draw more meaningful conclusions.

EM cannot be separated from the cultural context in which it occurs. Influenced by social changes brought about by modernization and industrialization, younger Chinese generations may be less likely to adhere to traditional Chinese cultural values and practices. Guided by the value of collectivism that encourages conformity and cohesiveness (8), Chinese elderly may be less likely to disclose EM and seek help. A prior study on Chinese older adults' perceptions of EM suggested that they tended to tolerate EM so as to protect family reputation (9). Another study among Asian American older adults further demonstrated that such tolerance for EM may be associated with not favoring reporting and outside intervention (10).

Prior studies suggested that EM was common among Chinese older adults in mainland China, ranging from 20% to 40% using the any positive item approach (11,12). Moreover, EM was found to be associated with psychosocial

distress among Chinese older adults (13). However, there is a dearth of investigations examining EM in U.S. Chinese older populations. The Chinese community is the largest and the fastest growing Asian American subgroup population in the United States, numbering ~4 million (14). The population of U.S. Chinese adults aged ≥65 years has increased by 55% in the past decade, far exceeding the general population growth rate of 15% among U.S. older adults (15).

The purposes of this study are to: (i) investigate the prevalence of EM subtypes and overall EM using different definitional criteria; and (ii) examine sociodemographic and health-related correlates of EM using different definitional criteria among U.S. Chinese older adults.

Methods

Population and Settings

The Population Study of Chinese Elderly in Chicago (PINE) is a community-engaged, population-based epidemiological study of U.S. Chinese older adults aged ≥60 years conducted in the greater Chicago area. The project was initiated by a synergistic community-academic collaboration among the Rush Institute for Healthy Aging, Northwestern University, and many community-based social services agencies and organizations throughout the greater Chicago area.

To ensure study relevance to the well-being of the Chinese community and increase community participation, the PINE study implemented extensive culturally and linguistically appropriate community recruitment strategies strictly guided by a community-based participatory research (CBPR) approach. The formation of this community-academic partnership allowed us to develop appropriate research methodology in accordance with the local Chinese cultural context, in which a community advisory board (CAB) plays a pivotal role in providing insights and strategies for conducting research. Board members were community stakeholders and residents enlisted through over 20 civic, health, social, and advocacy groups, community centers and clinics in the city and suburbs of Chicago.

Study Design and Procedure

The research team implemented a targeted community-based recruitment strategy by first engaging community centers as our main recruitment sites throughout the greater Chicago area. Over 20 social services agencies, community centers, health advocacy agencies, faith-based organizations, senior apartments, and social clubs served as the basis of study recruitment sites. Community-dwelling older adults who aged ≥60 years and self-identified as Chinese were eligible to participate in the study. Out of 3,542 eligible older adults approached, 3,159 agreed to participate in the study, yielding a response rate of 91.9 %. More in-depth details of the PINE study design are currently in press (16).

To ensure cultural and linguistic sensitivity, trained multicultural and multilingual interviewers conducted face-to-face home interviews with participants in their preferred language and dialects, such as English, Cantonese, Taishanese, Mandarin, or Teochew dialect. Based on the available census data drawn from U.S. Census 2010 and a random block census project conducted in the Chinese community in Chicago, the PINE study is representative of the Chinese aging population in the greater Chicago area (17). The study was approved by the Institutional Review Boards of the Rush University Medical Center.

Measurements

Sociodemographics.—Basic demographic information was collected that included age, sex, education, annual personal income, marital status, number of children, and living arrangement. Overall health status was measured by the question, "how would you rate your health?" on a four-point scale. Quality of life was assessed by asking participants, "how would you rate your quality of life?" using a four-point scale. Health changes over the last year was measured by the question, "compared to 1 year ago, how would you rate your health now?" on a three-point scale.

EM subtypes.—EM was assessed using a 56-item self-reported measure that captures the following EM subtypes: psychological abuse, physical abuse, sexual abuse, caregiver neglect, and financial exploitation. For psychological abuse, we used the eight-items modified Conflict Tactic Scale (CTS) (18). For physical abuse, we used 10 items in the CTS. For sexual abuse, we used one item asking participants if they have been touched in private areas when they did not want to be. Among those who reported any sexual abuse, we followed up questions asking the specific sexual abuse experience. For caregiver neglect, we used an unmet needs assessment (20 items) (19). Participants were also asked to self-evaluate the severity of their unmet needs (no/mild/moderate/severe). Financial exploitation was measured with 17 items (20). (Details of the items are given in Table 1.)

Definitions of EM subtypes.—Five definitions were constructed for psychological abuse: (i) an affirmative "yes" response to having experienced any of the eight CTS psychological abuse items (CTS-1); (ii) two or more items (CTS-2); (iii) affirmative responses in three or more items (CTS-3); (iv) three or more items *or* threats for nursing home placement or abandonment (Beach criteria); and (v) 10+ times for CTS items (Pillemer criteria). For physical abuse, we only used a criterion, consisting of any positive response to any of the 10 items. For sexual abuse, we also used a criterion, consisting of a positive response to the one-item. For caregiver neglect, we used two different definitions: (i) any unmet needs + living with a family member (caregiver neglect-1),

Table 1. Prevalence of Elder Mistreatment Items in a Chicago Chinese Aging Population (N = 3,159)

Psychological abuse		
Screamed or yelled at you	186	5.90%
Insulted you, called you names, swore at you	181	5.75%
Said something to deliberately hurt you	144	4.57%
Stomped out of room after an argument	47	1.49%
Destroyed something that belong to you	13	0.41%
Threatened to hit you or throw something at you	18	0.57%
Threatened to send you to a nursing home	10	0.32%
Threatened to abandon you	26	0.83%
Physical abuse		
Hit/slapped	22	0.70%
Pushed/ shoved	9	0.29%
Shaken	6	0.19%
Kicked	3	0.10%
Handled you roughly	13	0.41%
Thrown something	9	0.29%
Twisted arm or hair	5	0.16%
Choked	3	0.10%
Slammed against the wall	2	0.06%
Beat up	4	0.13%
Sexual abuse		
Touched your private area when you did not want this	6	0.19%
Caregiver neglect impairment+unmet needs+living with someone		
Eating	2	0.06%
Dressing and undressing	8	0.25%
Bathing	18	0.57%
Walking	14	0.44%
Getting in-out of bed	8	0.25%
With personal grooming tasks	3	0.10%
Assisting with incontinence	6	0.19%
Using toilet	8	0.25%
Managing money	46	1.46%
Using telephone	31	0.98%
Preparing meals	59	1.87%
Doing laundry	71	2.25%
Taking medications	18	0.57%
Doing housework	81	2.57%
Assisting in routine health needs	2	0.07%
Assisting in special health needs	2	0.07%
Shopping	90	2.85%
Traveling	78	2.48%
Getting outside your home	35	1.11%
Not to be alone by yourself	15	0.48%
Financial exploitation		
Refused to give you reasons or lied about spending your money	36	1.46%
Convinced you to turn your property over to them	14	0.44%
Unexplained disappearances of your money or possession	55	1.75%
Became payee on your benefit check and use it for themselves	7	0.22%
Changed direct deposit destination to benefit themselves	2	0.06%
Unauthorized activities in your bank account	7	0.22%
Forced you to change/sign legal or financial documents	7	0.22%
Used your money on themselves instead of you	10	0.32%
Borrowed money and not paid back	115	3.65%
Lied about buying something for you, but for their own	1	0.03%
Switched your expensive items for cheaper ones	2	0.06%
Prevent you from spending your money to maximize the inheritance	4	0.13%
Felt entitled to use your money for them	16	0.51%
Overcharged you for work or services that were done poorly or never done	25	0.79%
Tricked or pressured you into buying something	16	0.51%
Victim of fraud (investment, Medicare, Medicaid, etc)	51	1.62%
Make you victims of scam (home repair scam, phone scam, etc)	55	1.75%

and (ii) moderate/severe unmet needs + living with a family member (caregiver neglect-2). For financial exploitation, we used two different definitions: (i) any positive answer on the 17-item measure (financial abuse-1), and (ii) any positive answer on the 14-item measure, but *excluding* the items that may be less likely to be considered as financial exploitation: felt entitled to use your money, prevented you from spending your money, and tricked or pressured you into buying something (financial abuse-2).

Different definitions of overall EM.—We constructed definitions for overall EM using different combinational criteria. For the least restrictive criteria, we used psychological abuse CTS-1, physical abuse, sexual abuse, caregiver neglect-1, and financial abuse-1. For the moderate restrictive criteria, we used psychological abuse CTS-2, physical abuse, sexual abuse, caregiver neglect-2, and financial abuse-1. For the most restrictive criteria, we used the Pillemer criteria, physical abuse, sexual abuse, caregiver neglect-2, and financial abuse-2.

Data Analysis

We used univariate analyses to describe the individual 56-items that make up the EM subtypes. For each definitional criterion, we conducted univariate analyses to examine the prevalence of each EM subtype and overall EM. We summarized the demographic, socioeconomic, family composition, immigration, and health-related characteristics of the participants by EM groups according to different restrictiveness levels and definitional criteria. Chi-square statistics were used to compare participant characteristics between groups with and without EM. Lastly, we used Chi-square statistics to compare participant characteristics among EM groups using different restrictiveness criteria for overall EM. All statistical analyses were undertaken using SAS, Version 9.2 (SAS Institute Inc., Cary, North Carolina).

Results

EM Subtypes by Different Criteria

Of the 3,159 participants, 58.9% were female. Table 1 presents the prevalence of the 56-items. We constructed prevalence estimates in our sample of U.S. Chinese older adults based on different criteria (Table 2). Prevalence of psychological abuse was 9.8% using the CTS-1 criteria; 5.3% using the CTS-2 criteria, 2.6% using CTS-3, 2.9% using the Beach criteria, and 1.1% using the Pillemer criteria. Based on an affirmative response to any item on the 10-item physical abuse measure and the 1-item sexual abuse measure, prevalence of physical abuse was 1.1% and 0.2% for sexual abuse. For caregiver neglect, the less-strict criteria yielded a prevalence of 11.1% and the more-strict criteria yielded a prevalence of 4.6%. For financial exploitation, the less-strict criteria yielded a prevalence of 9.3% and the more-strict criteria yielded a prevalence of 8.8%.

Table 2. Prevalence of Elder Mistreatment Subtypes by Different Definitions (N = 3,159)

Psychological abuse		
Conflict Tactic Scale (CTS) 1 or more item	308	9.79%
CTS ≥ 2-items	167	5.31%
CTS ≥ 3-items	81	2.57%
Beach criteria	91	2.89%
Pillemer criteria	34	1.08%
Physical abuse		
Conflict Tactic Scale ≥1 items	33	1.05%
Sexual abuse		
Sexual abuse scale 1 item	6	0.19%
Caregiver neglect		
Criteria 1	331	11.14%
Criteria 2	136	4.58%
Financial exploitation		
Financial exploitation scale criteria 1	291	9.25%
Financial exploitation scale criteria 2	278	8.83%

Notes: Beach criteria: ≥3-items on the CTS or any yes threats for nursing home placement or abandonment. Pillemer criteria: ≥10-times occurrence for CTS items: insult, threaten to hit, threats for nursing home, and threats for abandonment. Caregiver neglect criteria-1: Any unmet needs for basic care + living with a family member. Caregiver neglect criteria-2: Moderate/severe unmet needs for basic care + living with a family member.

Overall EM by Different Criteria

The prevalence of EM by different combinations of definitional criteria for EM subtypes is shown in Table 3. Using the least-restrictive criteria, the prevalence of EM was 25.8%. Using the moderate-restrictive criteria, the prevalence of EM was 17.1%. Using the most-restrictive criteria, the prevalence of EM was 13.9%.

Characteristics Associated With EM by Strictness of the Definitional Criteria

Regardless of the strictness of EM definitions, compared with those without any EM, those with EM were more likely to be older in age, have higher education, poor health, poor quality of life, and worsened health (Table 4). Under the least-restrictive criteria, those living with fewer people were less likely to have EM. Using the moderate-restrictive criteria, those with fewer number of children and those lived who resided fewer years in the community were more likely to have EM. Examined under the most-restrictive criteria, men and immigrants who have spent fewer years in the United States were more likely to have EM.

Comparison of Characteristics Associated with Different Definitions of EM

In Table 5, we compared the differences in sociodemographic and health-related characteristics between EM1 and

Table 3. Cumulative Differences in Overall Prevalence of Elder Mistreatment (EM) by Different Criteria

Least restrictive criteria for all subtypes of EM on the overall prevalence of EM		
Psych CTS-1, physical, sexual, neglect criteria 1 and financial criteria 1	815	25.83%
Varying levels of criteria for psychological abuse on the overall prevalence of EM		
Psych CTS-1, physical, sexual, neglect criteria 1 and financial criteria 1	815	25.83%
Psych CTS-2, physical, sexual, neglect criteria 1 and financial criteria 1	713	22.60%
Psych CTS-3, physical, sexual, neglect criteria 1 and financial criteria 1	651	20.63%
Psych Beach, physical, sexual, neglect criteria 1 and financial criteria 1	659	20.89%
Psych Pillemer, physical, sexual, neglect criteria 1 and financial criteria 1	632	20.03%
Varying levels of criteria for caregiver neglect on the overall prevalence of EM		
Psych CTS-1, physical, sexual, neglect criteria 1 and financial criteria 1	815	25.83%
Psych CTS-2, physical, sexual, neglect criteria 1 and financial criteria 1	713	22.60%
Psych CTS-1, physical, sexual, neglect criteria 2 and financial criteria 1	646	20.48%
Psych CTS-2, physical, sexual, neglect criteria 2 and financial criteria 1	540	17.12%
Psych CTS-3, physical, sexual, neglect criteria 2 and financial criteria 1	474	15.02%
Psych Beach, physical, sexual, neglect criteria 2 and financial criteria 1	482	15.28%
Psych Pillemer, physical, sexual, neglect criteria 2 and financial criteria 1	453	14.36%
Varying levels of criteria for financial exploitation on the overall prevalence of EM		
Psych CTS-1, physical, sexual, neglect criteria 1 and financial criteria 1	815	25.83%
Psych CTS-1, physical, sexual, neglect criteria 1 and financial criteria 2	805	25.52%
Psych CTS-1, physical, sexual, neglect criteria 2 and financial criteria 2	635	20.13%
Psych CTS-2, physical, sexual, neglect criteria 2 and financial criteria 2	527	16.70%
Psych CTS-3, physical, sexual, neglect criteria 2 and financial criteria 2	460	14.58%
Psych Beach, physical, sexual, neglect criteria 2 and financial criteria 2	468	14.83%
Psych Pillemer, physical, sexual, neglect criteria 2 and financial criteria 2	439	13.91%
Most restrictive criteria for all subtypes of em on the overall prevalence of EM		
Psych Pillemer, physical, sexual, neglect criteria 2 and financial criteria 2	439	13.91%

EM2, EM2 and EM3, EM1 and EM3, and all three overall EM definitions. However, there were no statistically significant differences across any of all characteristics, including age, sex, education, income, marital status, number of children, living arrangement, years in the United States, years in the community, country of origin, health status, quality of life, and health changes over the past year among the least-restrictive, moderate-restrictive, or most-restrictive definitions for EM.

Discussion

With the context of a large population-based epidemiological study in a community-dwelling Chinese aging population, we found that although definitional criteria influences the prevalence of EM, EM was prevalent among Chinese older adults regardless of the definitional criteria used. Financial exploitation was the most common EM subtype, followed by psychological abuse, caregiver neglect, physical abuse, and sexual abuse. Older age, higher educational level, fewer children, lower health status, poorer quality of life, and worsened health over the last year were associated with experiencing EM regardless of the definitional criteria. However, among those with EM, these characteristics were not statistically different by strictness of the EM definitional criteria.

Building on prior studies on EM in Chinese populations in Western countries, this study demonstrates that EM and its subtypes are common among U.S. Chinese older adults. Our prior study in the PINE cohort used a 10-item brief screening measure, yielding a prevalence of 15% for EM using the any positive item approach (21). However, this screening measure only captured the broader constructs of vulnerability, coercion, dependency and could not capture the subtypes of EM as we have done in this study. A prior study of 2,272 Chinese older adults aged ≥55 years in Canada using a telephone survey, found that the prevalence of EM was 4.5% using the any positive item approach (22). However, the Canadian study was also unable to comprehensively assess EM subtypes.

In P.R.China, a study of 412 Chinese older adults in a clinical setting found the prevalence of EM was 35% (11). However, this study was based in a primary care setting with a larger proportion of vulnerable older adults, and thus the prevalence of EM may be higher than that of our study population. Chinese older adults in Mainland China or Hong Kong may be subjected to substantially different socioeconomic influences, which may affect the prevalence of EM. A study of 355 older Chinese in Hong Kong found prevalence rates of 2% for physical abuse and 20.8% for verbal abuse (23). The trend of internal migration from rural to urban areas may increase rural older adults' risk of being neglected and abused. A cross-sectional survey conducted in rural China reported that the prevalence of any acts of EM among older adults aged ≥60 years was 36.2% (12).

Our study builds on these prior works to systematically examine the prevalence of EM and its subtypes according to different definitional criteria. For psychological abuse, the prevalence varied widely from 9.8% to 1.1% depending on the strictness of the criteria. For caregiver neglect, the prevalence also varied from 11.1% to 4.6%. However, for financial exploitation, the prevalence did not vary as greatly,

Table 4. Comparison Between Different Definitions of Elder Mistreatment (EM) With Those Without EM

	No EM	Least Restrictive Definition		Moderate Restrictive Definition		Most Restrictive Definition	
	N = 2,340	*N* = 815 (25.8%)	χ^2 *p*	*N* = 540 (17.1%)	χ^2 *p*	*N* = 439 (13.9%)	χ^2 *p*
Age, *N* (%)							
60–64	559 (23.9)	121 (14.9)		85 (15.7)		65 (14.8)	
65–69	470 (20.1)	172 (21.1)		111 (20.6)		86 (19.6)	
70–74	426 (18.2)	179 (21.9)		122 (22.6)		100 (22.8)	
75–79	389 (16.6)	167 (20.5)	32.9	110 (20.4)	17.1	86 (19.6)	16.4
≥80	496 (21.2)	176 (21.6)	**.001**	112 (20.7)	**.002**	102 (23.2)	**.003**
Sex, *N* (%)							
Male	974 (41.6)	352 (43.2)	.6	247 (45.7)	3.7	230 (52.4)	6.5
Female	1,366 (58.4)	463 (56.8)	.44	293 (54.3)	.05	209 (47.6)	**.011**
Education (years), *N* (%)							
0–8	1,201 (51.6)	335 (41.4)		192 (35.8)		157 (36.0)	
9–12	683 (29.3)	257 (31.7)	31.3	179 (33.4)	53.8	149 (34.2)	38.4
≥13	445 (19.1)	218 (26.9)	**.001**	165 (30.8)	**.001**	130 (29.8)	**.001**
Income (USD), *N* (%)							
$0–$4,999	769 (33.2)	271 (33.6)		175 (32.8)		137 (31.7)	
$5,000–$9,999	1,204 (52.0)	413 (51.2)		264 (49.5)		212 (49.1)	
$10,000–$14,999	225 (9.7)	85 (10.5)	0.6	63 (11.8)	3.9	55 (12.7)	7.4
≥$15,000	117 (5.1)	38 (4.7)	.89	31 (5.8)	.27	28 (6.5)	.06
Marital status, *N* (%)							
Married	1,639 (70.5)	595 (73.6)		390 (73.0)		313 (72.3)	
Separated	39 (1.7)	18 (2.2)		15 (2.8)		11 (2.5)	
Divorced	55 (2.4)	19 (2.3)	4.8	14 (2.6)	6.2	11 (2.5)	2.3
Widowed	591 (25.4)	177 (21.9)	.18	115 (21.5)	.10	98 (22.6)	.51
No. of children (%)							
0–1	332 (14.2)	136 (16.7)		102 (19.0)		81 (18.6)	
2–3	1,311 (56.1)	436 (53.7)	3.3	288 (53.6)	8.9	230 (52.7)	5.5
≥4	694 (29.7)	240 (29.6)	.19	147 (27.4)	**.011**	125 (29.7)	.06
Living arrangement, *N* (%)							
Living alone	554 (23.7)	125 (15.3)		105 (19.4)		83 (18.9)	
1–2	1,116 (47.7)	458 (56.2)	28.3	294 (54.4)	5.4	242 (55.1)	5.6
≥3	669 (28.6)	232 (28.5)	**.001**	141 (26.1)	.06	114 (26.0)	.06
Years—United States, *N* (%)							
0–9	536 (23.0)	172 (21.2)		116 (21.7)		83 (19.1)	
10–19	701 (30.1)	237 (29.3)		154 (28.8)		124 (28.5)	
20–29	606 (26.0)	220 (27.2)	1.9	139 (26.0)	2.1	112 (25.8)	10.0
≥30	487 (20.9)	181 (22.3)	.60	126 (23.5)	.56	116 (26.6)	**.019**
Years—Community, *N* (%)							
0–9	1,194 (51.1)	436 (53.8)		309 (57.8)		235 (54.0)	
10–19	601 (25.7)	189 (23.3)		105 (19.6)		92 (21.2)	
20–29	350 (15.0)	115 (14.2)	2.7	70 (13.1)	14.6	63 (14.5)	6.3
≥30	190 (8.1)	70 (8.6)	.45	51 (9.5)	**.002**	45 (10.3)	.09
Country, *N* (%)							
Mainland China	2,180 (93.2)	748 (91.8)		489 (90.6)		399 (90.9)	
Hong Kong/Macau	72 (3.1)	32 (3.9)		22 (4.1)		18 (4.1)	
Taiwan	27 (1.1)	15 (1.8)		13 (2.4)		9 (2.0)	
United States/Canada	8 (0.3)	3 (0.4)	3.7	2 (0.4)	7.6	2 (0.5)	3.5
Others	53 (2.3)	17 (2.1)	.45	14 (2.6)	.11	11 (2.5)	.47
Health status, *N* (%)							
Very good	115 (4.9)	25 (3.1)		22 (4.1)		19 (4.3)	
Good	890 (38.0)	206 (25.3)		138 (25.6)		110 (25.1)	
Fair	962 (41.1)	357 (43.8)	79.1	234 (43.3)	38.4	191 (43.5)	31.7
Poor	373 (15.9)	227 (27.8)	**.001**	146 (27.0)	**.001**	119 (27.1)	**.001**
Quality of life, *N* (%)							
Very good	154 (6.6)	62 (7.6)		49 (9.1)		37 (8.4)	
Good	1,069 (45.7)	313 (38.4)		215 (39.8)		176 (40.1)	
Fair	1,045 (44.7)	410 (50.3)	13.3	246 (45.6)	18.8	198 (45.1)	20.1
Poor	70 (3.0)	30 (3.7)	**.004**	30 (5.6)	**.001**	28 (6.4)	**.001**
Health changes over the last year, *N* (%)							
Improved	195 (8.3)	82 (10.1)		60 (11.1)		43 (9.8)	
Same	1,212 (51.8)	322 (39.5)	36.4	197 (36.6)	38.2	166 (37.9)	23.9
Worsened	932 (39.9)	410 (50.4)	**.001**	282 (52.3)	**.001**	229 (52.3)	**.001**

Note: Bold values indicate $p < .05$.

Table 5. Differences Among Elder Mistreatment (EM) Definition Criteria Across Sociodemographic, Socioeconomic, Family, Immigration, and Health-Related Characteristics

	EM-1 vs EM-2		EM-1 vs EM-3		EM-2 vs EM-3		EM-1 vs EM-2 vs EM-3	
	χ^2	*p*	χ^2	*p*	χ^2	*p*	χ^2	*p*
Age	0.39	.98	0.86	.93	1.02	.91	1.45	.99
Sex	0.86	.35	2.25	.13	0.34	.56	2.40	.30
Education	4.50	.11	3.43	.18	0.12	.94	5.91	.21
Income	1.47	.69	3.41	.33	0.44	.93	3.66	.72
Marital status	0.57	.90	0.29	.96	0.22	.97	0.76	.99
Number of children	1.46	.48	0.67	.72	0.20	.90	1.66	.79
Living arrangement	4.06	.13	2.89	.24	0.06	.97	4.99	.29
Years—United States	0.43	.93	3.12	.37	1.74	.63	3.47	.75
Years—Community	3.49	.32	1.50	.68	1.37	.71	4.46	.61
Country of origin	0.94	.92	0.39	.98	0.19	.99	1.08	.99
Health status	1.05	.79	1.36	.71	0.06	.99	1.70	.95
Quality of life	5.11	.16	6.53	.09	0.41	.94	8.34	.21
Health changes last year	1.35	.51	0.42	.81	0.51	.77	1.61	.81

Notes: EM-1 = least restrictive definition of EM; EM-2 = moderate restrictive definition of EM; EM-3 = most restrictive definition of EM.

from 9.3% to 8.8%. Correspondingly, the overall prevalence of EM varied significantly from 25.8% using the least-restrictive criteria to 13.9% using the most-restrictive criteria. This data highlights the importance of clear definitions of EM when interpreting studying findings for research, practice, and policy. This is particularly true for psychological abuse and caregiver neglect, where definitional criteria have significant influences over the prevalence estimates. Prior studies on risk factors and consequences associated with EM have been primarily based on a singular definition for EM and have not considered the variation in criterion definitions with respect to those findings.

In contrast to existing literature on the association between lower levels of socioeconomic status and EM (6), our current study demonstrates that higher levels of education were positively correlated with EM, but lower level of income was not associated with EM. It is possible that Chinese older adults with higher education levels were more likely to identify and acknowledge EM. In addition, although better educated older adults may have higher social and economic status in their country of origin, language and cultural barriers experienced in the United States may lead to lower levels of self-esteem and increased psychosocial distress with respect to EM (13). This explanation may be supported by a study of low-income Latino older immigrant, which found that the prevalence of EM was higher among older adults with higher education (24). It is also possible that older adult with higher educational levels possessed more financial resource, and thereby may experience a higher risk for financial exploitation,

Our study has limitations. First, our study finding may not be generalizable to other racial/ethnic groups, especially regarding the definitional criteria for EM subtypes. Second, we did not have available data on the characteristics of potential EM perpetrators. Future studies could implement a dyadic approach to understand EM in a more comprehensive way. Third, the use of the self-reported measure for accessing EM may be subject to reporting bias. In addition, our study only captured a select set of definitions in the literature. Last, this study utilized a cross-sectional design, and we could not postulate on the potential temporal relationships.

This study has important implications for researchers, practice, and policy. First, this study suggested although the prevalence of elder abuse varied greatly by using different definitions, no significant differences were found in terms of sociodemographic and health-related characteristics associated with elder abuse. Increased research efforts should be put into understanding the risk and protective factors associated with elder abuse. Regardless of the definitions used, the study found that elder abuse was common among Chinese older adults, suggesting a need for improved investigation of elder abuse in this vulnerable population. The CBPR approach may be an effective model for approaching minority older adults and collecting culturally sensitive health issues. Healthcare professionals should improve detection of EM in clinical settings and improve their understanding about the nature, context, and severity of acts that may constitute EM. Physicians may need to enhance their understanding of cultural aspects of EM and be more aware about older adults who are at higher risk for EM, including those who are older, more highly educated, have lower overall health status and poorer quality of life. Moreover, community-based social service organizations should increase efforts on improving knowledge in relation to EM in the Chinese community. In addition to promoting older adults' general awareness of EM, more attention should be paid to helping older adults recognize abusive behaviors.

Furthermore, the findings from this study should have implications to the Elder Justice Act, the first federal legislation addressing EM at the national level. The differential definitions of EM could serve as the cornerstone to push for future research and policy agendas at the national level. As the Elder Justice Act is being implemented, policy makers should pay special attention to cultural issues surrounding EM definitions in estimating the prevalence of EM. At the state level, government should provide culturally appropriate resources and education to Adult Protective Services and other frontline workers to manage cases involving minority older adults (25).

Conclusion

EM is common in U.S. Chinese older adults regardless of the definitional criteria used. Older age, higher levels of education, lower overall health status, poorer quality of life, and worsening health over the past years were positively correlated with any EM among U.S. Chinese older adults.

However, these characteristics were not statistically different among the different definitional criteria for EM. Future longitudinal studies are needed to advance our knowledge of risk factors and health outcomes associated with different EM definitional criteria in Chinese aging populations.

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References

1. Acierno R, Hernandez MA, Amstadter AB, et al. Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: the National Elder Mistreatment Study. *Am J Public Health*. 2010;100:292–297.
2. Dong X, Simon M, Mendes de Leon C, et al. Elder self-neglect and abuse and mortality risk in a community-dwelling population. *JAMA*. 2009;302:517–526.
3. Dong X, Simon MA. Association between reported elder abuse and rates of admission to skilled nursing facilities: findings from a longitudinal population-based cohort study. *Gerontology*. 2013;59:464–472.
4. Dong X, Simon MA. Elder abuse as a risk factor for hospitalization in older persons. *JAMA Intern Med*. 2013;173:911–917.
5. U.S.Preventive Services Task Force. Third Annual Report to Congress on high-priority evidence gaps for clinical preventive services. 2013 http://www.uspreventiveservicestaskforce.org/annlrpt3/. Accessed October 23, 2013.
6. Beach SR, Schulz R, Castle NG, Rosen J. Financial exploitation and psychological mistreatment among older adults: differences between African Americans and non-African Americans in a population-based survey. *Gerontologist*. 2010;50:744–757.
7. Pillemer K, Finkelhor D. The prevalence of elder abuse: a random sample survey. *Gerontologist*. 1988;28:51–57.
8. Ho DY-F, Chiu CY. Component ideas of individualism, collectivism, and social organization: an application in the study of Chinese culture. *Individualism and Collectivism: Theory, Method, and Applications*. Thousand Oaks, CA: Sage Publications, Inc; 1994:137–156.
9. Dong X, Chang ES, Wong E, Wong B, Simon MA. How do U.S. Chinese older adults view elder mistreatment?: findings from a community-based participatory research study. *J Aging Health*. 2011;23:289–312.
10. Moon A, Williams O. Perceptions of elder abuse and help-seeking patterns among African-American, Caucasian American, and Korean-American elderly women. *Gerontologist*. 1993;33:386–395.
11. Dong X, Simon MA, Gorbien M. Elder abuse and neglect in an urban Chinese population. *J Elder Abuse Negl*. 2007;19:79–96.
12. WCu L, Chen H, Hu Y, et al. Prevalence and associated factors of elder mistreatment in a rural community in People's Republic of China: a cross-sectional study. *PLoS One*. 2012;7:e33857.
13. Dong X, Chang E-S, Wong E, Wong B, Simon MA. Association of depressive symptomatology and elder mistreatment in a US Chinese population: Findings from a community-based participatory research study. *Journal of Aggression, Maltreatment & Trauma.* 2014;23:81–98.
14. U.S.Census Bureau. 2011 *American Community Survey*: 2011 Estimates. http://www.census.gov/acs/www/. Accessed October 23, 2013.
15. U.S.Census Bureau. *American Fact Finder*. 2010. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed October 15, 2013.
16. Dong X, Wong E, Simon M. Study design and implementation of the PINE study. *J Aging Health*. 2014;26:1085–1099. doi:10.1177/0898264314526620
17. Simon M, Chang E-S, Rajan KB, Welch MJ, Dong X. Demographic characteristics of U.S. Chinese older adults in the greater Chicago area: assessing the representativeness of the PINE study. *J Aging Health.* 2014;26:1100–1115.
18. Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The revised conflict tactics scales (CTS2) development and preliminary psychometric data. *J Fam Issues* 1996;17:283–316.
19. Katz S. Assessing self-maintenance: activities of daily living, mobility, and instrumental activities of daily living. *J Am Geriatr Soc*. 1983;31:721–727.
20. Conrad KJ, Iris M, Ridings JW, Fairman KP, Rosen A. Conceptualizing and Measuring Financial Exploitation of Older Adults. Report to the National Institute of Justice. Grant #. 2006-MU-2004; 2008.
21. Dong X, Chen R, Simon M. Prevalence and correlates of elder mistreatment in a community-dwelling population of U.S. chinese older adults. *J Aging Health*. In press 2014.
22. Lai DW. Abuse and neglect experienced by aging chinese in Canada. *J Elder Abuse Negl*. 2011;23:326–347.
23. Yan E, Tang CS. Prevalence and psychological impact of Chinese elder abuse. *J Interpers Violence.* 2001;16:1158–1174.
24. DeLiema M, Gassoumis ZD, Homeier DC, Wilber KH. Determining prevalence and correlates of elder abuse using promotores: low-income immigrant Latinos report high rates of abuse and neglect. *J Am Geriatr Soc*. 2012;60:1333–1339.
25. Dong X, Simon MA. Enhancing national policy and programs to address elder abuse. *JAMA*. 2011;305:2460–2461.